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LAMPIRAN

Lampiran 1 Tabel Ukuran Kristal TiO_2 dan Pewarna

Ukuran Kristal TiO_2

2θ	Intensitas TiO_2	β_{hkl}	hkl			Metode Scherrer	
			h	k	l	Ukuran Kristal (nm)	Ukuran rata-rata Kristal (nm)
25,07	7296	0,2870	1	0	1	28,03	33,48
37,78	404	0,1800	0	0	4	46,11	
47,83	2619	0,2836	2	0	0	30,29	
53,70	1520	0,3016	4	2	2	29,18	
54,86	1597	0,2620	2	0	2	33,77	

Ukuran Kristal Kulit Buah Naga

2θ	Intensitas Kulit Buah Naga	β_{hkl}	hkl			Metode Scherrer	
			h	k	l	Ukuran Kristal (nm)	Ukuran rata-rata Kristal (nm)
25,09	9211	0,2813	1	0	1	28,60	33,91
37,59	2090	0,2531	0	0	4	32,76	
47,85	3493	0,2507	2	0	0	34,27	
53,70	2229	0,2408	4	2	2	36,55	
54,88	2222	0,2368	2	0	2	37,37	

Ukuran Kristal Daun Mangga

2θ	Intensitas Daun Mangga	β_{hkl}	hkl			Metode Scherrer	
			h	k	l	Ukuran Kristal (nm)	Ukuran rata-rata Kristal (nm)
25,09	9003	0,3142	1	0	1	25,60	27,56
37,58	1665	0,2994	0	0	4	27,70	
47,84	2928	0,2984	2	0	0	28,79	
53,70	2141	0,3224	4	2	2	27,30	
54,89	1766	0,3114	2	0	2	28,42	

Ukuran Kristal CAM 1:1

2θ	Intensitas CAM 1:1	β_{hkl}	hkl			Metode Scherrer	
			h	k	l	Ukuran Kristal (nm)	Ukuran rata-rata Kristal (nm)
25,04	8074	0,2730	1	0	1	29,47	37,28
37,54	1668	0,2323	0	0	4	35,70	
47,79	2415	0,2076	2	0	0	41,37	
53,65	1602	0,2224	4	2	2	39,57	
54,83	1679	0,2196	2	0	2	40,29	

Ukuran Kristal CAM 1:2

2θ	Intensitas CAM 1:2	β_{hkl}	hkl			Metode Scherrer	
			h	k	l	Ukuran Kristal (nm)	Ukuran rata-rata Kristal (nm)
25,24	10915	0,3059	1	0	1	26,31	31,77
37,73	2497	0,2838	0	0	4	29,24	
47,98	3917	0,2698	2	0	0	31,86	
53,83	2498	0,2494	4	2	2	35,31	
55,00	2297	0,2450	2	0	2	36,14	

Ukuran Kristal CAM 2:1

2θ	Intensitas CAM 2:1	β_{hkl}	hkl			Metode Scherrer	
			h	k	l	Ukuran Kristal (nm)	Ukuran rata-rata Kristal (nm)
25,20	10836	0,3119	1	0	1	25,80	31,69
37,69	2525	0,2737	0	0	4	30,32	
47,94	3868	0,2485	2	0	0	34,58	
53,79	2602	0,2633	4	2	2	33,44	
54,96	2353	0,2582	2	0	2	34,28	

Lampiran 2 Data Pengukuran Arus dan Tegangan

Intensitas (P_{cahaya}) = 0,038 (W/cm^2)

Luas daerah aktif kaca (A) = 4 cm^2

Ekstrak Daun Mangga

Resistor (Ω)	Tegangan (V)	Arus (A)	J (A/m^2)
1000	0,0532	$53,19 \times 10^{-6}$	0,1330
900	0,0461	$51,26 \times 10^{-6}$	0,1281
800	0,0409	$51,10 \times 10^{-6}$	0,1278
700	0,0361	$51,63 \times 10^{-6}$	0,1291
600	0,0313	$52,10 \times 10^{-6}$	0,1303
500	0,0261	$52,18 \times 10^{-6}$	0,1305
400	0,0212	$52,93 \times 10^{-6}$	0,1323
300	0,0161	$53,50 \times 10^{-6}$	0,1338
200	0,0104	$52,20 \times 10^{-6}$	0,1305
100	0,0053	$53,00 \times 10^{-6}$	0,1325
50	0,0026	$52,60 \times 10^{-6}$	0,1315

Ekstrak Kulit Buah Naga

Resistor (Ω)	Tegangan (V)	Arus (A)	J (A/m^2)
1000	0,0277	$27,74 \times 10^{-6}$	0,0694
900	0,0260	$28,91 \times 10^{-6}$	0,0723
800	0,0250	$31,20 \times 10^{-6}$	0,0780
700	0,0235	$33,60 \times 10^{-6}$	0,0840
600	0,0222	$37,00 \times 10^{-6}$	0,0925
500	0,0207	$41,48 \times 10^{-6}$	0,1037
400	0,0189	$47,20 \times 10^{-6}$	0,1180
300	0,0165	$55,00 \times 10^{-6}$	0,1375
200	0,0134	$66,80 \times 10^{-6}$	0,1670
100	0,0088	$87,80 \times 10^{-6}$	0,2195
50	0,0048	$96,40 \times 10^{-6}$	0,2410

Ekstrak CAM 1:2

Resistor (Ω)	Tegangan (V)	Arus (A)	J (A/m^2)
1000	0,0033	3,28 x 10^{-6}	0,0082
900	0,0032	3,60 x 10^{-6}	0,0090
800	0,0031	3,85 x 10^{-6}	0,0096
700	0,0015	2,11 x 10^{-6}	0,0053
600	0,0014	2,30 x 10^{-6}	0,0058
500	0,0013	2,68 x 10^{-6}	0,0067
400	0,0013	3,20 x 10^{-6}	0,0080
300	0,0012	3,93 x 10^{-6}	0,0098
200	0,0010	5,00 x 10^{-6}	0,0125
100	0,0007	6,60 x 10^{-6}	0,0165
50	0,0003	6,80 x 10^{-6}	0,0170

Ekstrak CAM 1:1

Resistor (Ω)	Tegangan (V)	Arus (A)	J (A/m^2)
1000	0,0289	28,90 x 10^{-6}	0,0723
900	0,0283	31,42 x 10^{-6}	0,0786
800	0,0272	33,95 x 10^{-6}	0,0849
700	0,0259	36,97 x 10^{-6}	0,0924
600	0,0245	40,83 x 10^{-6}	0,1021
500	0,0228	45,52 x 10^{-6}	0,1138
400	0,0207	51,65 x 10^{-6}	0,1291
300	0,0180	59,87 x 10^{-6}	0,1497
200	0,0143	71,60 x 10^{-6}	0,1790
100	0,0092	91,60 x 10^{-6}	0,2290
50	0,0051	101,60 x 10^{-6}	0,2540

Ekstrak CAM 2:1

Resistor (Ω)	Tegangan (V)	Arus (A)	J (A/m^2)
1000	0,0168	16,80 x 10^{-6}	0,0420
900	0,0147	16,36 x 10^{-6}	0,0409
800	0,0130	16,25 x 10^{-6}	0,0406
700	0,0114	16,23 x 10^{-6}	0,0406
600	0,0098	16,37 x 10^{-6}	0,0409
500	0,0083	16,60 x 10^{-6}	0,0415
400	0,0068	16,95 x 10^{-6}	0,0424
300	0,0051	16,93 x 10^{-6}	0,0423
200	0,0033	16,60 x 10^{-6}	0,0415
100	0,0016	15,80 x 10^{-6}	0,0395
50	0,0007	13,20 x 10^{-6}	0,0330

Lampiran 3 Perhitungan Efisiensi DSSC

1. Perhitungan efisiensi sel DSSC dari ekstrak daun mangga

   Diketahui:

   V_{maks} = 0,0532 V

   I_{maks} = 53,19 x 10^{-6} A

   V_{oc} = 0,0532 V

   I_{sc} = 51,1 x 10^{-6} A

   A = 4 x 10^{-4} m^2

   P_{cahaya} = 380 W/m^2

   Peny.

$$J_{sc} = \frac{I_{sc}}{A} = \frac{51{,}1 \text{ x } 10^{-6} \text{ A}}{4 \times 10^{-4}\ m^2} = 12{,}76 \times 10^{-2}\ A/m^2$$

$$J_{maks} = \frac{I_{maks}}{A} = \frac{53{,}19 \times 10^{-6} \text{ A}}{4 \times 10^{-4}\ m^2} = 13{,}3 \times 10^{-2}\ A/m^2$$

$$FF = \frac{V_{maks}J_{maks}}{V_{oc}J_{sc}} = \frac{0{,}0532\ Volt\ \times (13{,}3\ \times 10^{-2}\ A/m^2)}{0{,}0532\ \ Volt\ \times (12{,}76\ \times 10^{-2}\ A/m^2)}$$

$$= \frac{0{,}708 \times 10^{-2}}{0{,}679 \times 10^{-2}} = 1{,}043$$

$$P_{maks} = V_{oc}J_{sc}FF = 0{,}0532\ Volt\ \times (12{,}76\ \times 10^{-2}\ A/m^2)\ \times\ 1{,}043$$

$$= 0{,}708\ \times 10^{-2}\ W/m^2$$

$$\eta = \frac{P_{maks}}{P_{cahaya}} \times 100\% = \frac{0{,}708\ \times 10^{-2}\ W/m^2}{380\text{ W}/m^2} \times 100\% = 0{,}00186\%$$

2. Perhitungan efisiensi sel DSSC dari ekstrak kulit buah naga

   V_{maks} = 0,0165 V

   I_{maks} = 55 x 10^{-6}A

   V_{oc} = 0,0277 V

   I_{sc} = 96,4 x 10^{-6} A

   A = 4 x 10^{-4} m^2

   P_{cahaya} = 380 W/m^2

   Peny.

$$J_{sc} = \frac{I_{sc}}{A} = \frac{96,4 \times 10^{-6}\ A}{4 \times 10^{-4}\ m^2} = 24,1 \times 10^{-2}\ A/m^2$$

$$J_{maks} = \frac{I_{maks}}{A} = \frac{55 \times 10^{-6}\ A}{4 \times 10^{-4}\ m^2} = 13,75 \times 10^{-2}\ A/m^2$$

$$FF = \frac{V_{maks}J_{maks}}{V_{oc}J_{sc}} = \frac{0,0165\ Volt\ \times (13,75 \times 10^{-2}\ A/m^2)}{0,0277\ Volt\ \times (24,1 \times 10^{-2}\ A/m^2)}$$

$$= \frac{0,227 \times 10^{-2}}{0,668 \times 10^{-2}} = 0,33$$

$$P_{maks} = V_{oc}J_{sc}FF = 0,0277\ Volt\ \times (24,1 \times 10^{-2}\ A/m^2)\ \times 0,33$$

$$= 0,22 \times 10^{-2}\ W/m^2$$

$$\eta = \frac{P_{maks}}{P_{cahaya}} \times 100\% = \frac{0,22 \times 10^{-2}\ W/m^2}{380\ W/m^2} \times 100\% = 0,00058\%$$

3. Perhitungan efisiensi sel DSSC dari ekstrak CAM 1:2

   V_{maks} = 0,0031 V

   I_{maks} = 3,85 x 10^{-6} A

   V_{oc} = 0,0033 V atau 8,2 x 10^{-4} V

   I_{sc} = 6,8 x 10^{-6} A

   A = 4 x 10^{-4} m^2

   P_{cahaya} = 380 W/m^2

   Peny.

$$J_{sc} = \frac{I_{sc}}{A} = \frac{6,8 \times 10^{-6}\ A}{4 \times 10^{-4}\ m^2} = 1,7 \times 10^{-2}\ A/m^2$$

$$J_{maks} = \frac{I_{maks}}{A} = \frac{3,85 \times 10^{-6}\ A}{4 \times 10^{-4}\ m^2} = 0,96 \times 10^{-2}\ A/m^2$$

$$FF = \frac{V_{maks}J_{maks}}{V_{oc}J_{sc}} = \frac{(0,0031\ Volt)\ \times (0,96 \times 10^{-2}\ A/cm^2)}{(0,0033\ Volt)\ \times (1,7 \times 10^{-2}\ A/cm^2)}$$

$$= \frac{2,98 \times 10^{-5}}{2,31 \times 10^{-5}} = 1,29$$

$$P_{maks} = V_{oc}J_{sc}FF = 0,0033\ Volt \times (1,7 \times 10^{-2}\ A/m^2)\ \times 1,29$$

$$= 7,24 \times 10^{-5}\ W/m^2$$

$$\eta = \frac{P_{maks}}{P_{cahaya}} \times 100\% = \frac{7{,}24 \times 10^{-5}\ W/m^2}{380\ W/m^2} \times 100\% = 0{,}00002\%$$

4. Perhitungan efisiensi sel DSSC dari ekstrak CAM 1:1

   V_{maks} = 0,018 V

   I_{maks} = 59,87 x 10^{-6} A

   V_{oc} = 0,0289 V

   I_{sc} = 101,6 x 10^{-6} A

   A = 4 x 10^{-4} m^2

   P_{cahaya} = 380 W/m^2

   Peny.

$$J_{sc} = \frac{I_{sc}}{A} = \frac{101{,}6 \times 10^{-6}\ A}{4 \times 10^{-4}\ m^2} = 25{,}4 \times 10^{-2}\ A/m^2$$

$$J_{maks} = \frac{I_{maks}}{A} = \frac{59{,}87 \times 10^{-6}\ A}{4 \times 10^{-4}\ cm^2} = 14{,}97 \times 10^{-2}\ A/m^2$$

$$FF = \frac{V_{maks}J_{maks}}{V_{oc}J_{sc}} = \frac{0{,}018\ Volt\ \times (14{,}97 \times 10^{-2}\ A/m^2)}{0{,}0289\ Volt\ \times (25{,}4 \times 10^{-2}\ A/m^2)}$$

$$= \frac{0{,}27 \times 10^{-2}}{0{,}73 \times 10^{-2}} = 0{,}37$$

$$P_{maks} = V_{oc}J_{sc}FF = 0{,}0289\ Volt\ \times (25{,}4 \times 10^{-2}\ A/m^2)\ \times 0{,}37$$

$$= 0{,}27 \times 10^{-2}\ W/m^2$$

$$\eta = \frac{P_{maks}}{P_{cahaya}} \times 100\% = \frac{0{,}27 \times 10^{-2}\ W/m^2}{380\ W/m^2} \times 100\% = 0{,}00071\%$$

5. Perhitungan efisiensi sel DSSC dari ekstrak CAM 2:1

   V_{maks} = 0,0168 V

   I_{maks} = 16,8 x 10^{-6} A

   V_{oc} = 0,0168 V

   I_{sc} = 16,95 x 10^{-6} A

   A = 4 x 10^{-4} m^2

   P_{cahaya} = 380 W/m^2

   Peny.

$$J_{sc} = \frac{I_{sc}}{A} = \frac{16,95 \times 10^{-6}\ A}{4 \times 10^{-4}\ m^2} = 4,24 \times 10^{-2}\ A/m^2$$

$$J_{maks} = \frac{I_{maks}}{A} = \frac{16,8 \times 10^{-6}\ A}{4 \times 10^{-4}\ m^2} = 4,2 \times 10^{-2}\ A/m^2$$

$$FF = \frac{V_{maks}J_{maks}}{V_{oc}J_{sc}} = \frac{0,0168\ Volt\ \times (4,2 \times 10^{-2}\ A/m^2)}{0,0168\ Volt\ \times (4,24 \times 10^{-2}\ A/m^2)}$$

$$= \frac{0,071 \times 10^{-2}}{0,071 \times 10^{-2}} = 1$$

$$P_{maks} = V_{oc}J_{sc}FF = 0,0168\ Volt\ \times\ 4,24 \times 10^{-2}\ A/m^2\ \times 1$$

$$= 0,071 \times 10^{-2}\ W/m^2$$

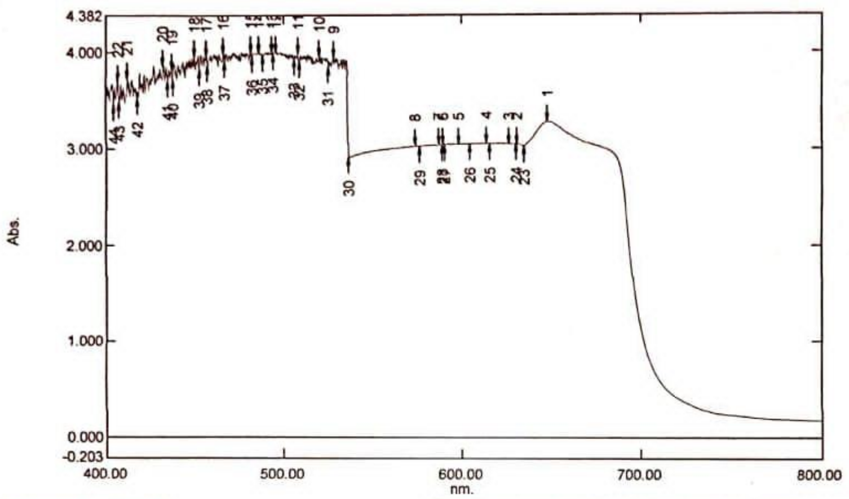
$$\eta = \frac{P_{maks}}{P_{cahaya}} \times 100\% = \frac{0,071 \times 10^{-2}\ W/m^2}{380\ W/m^2} \times 100\% = 0,00019\%$$

Lampiran 4 Hasil Uji Spektrofotometer UV-Vis

Spectrum Peak Pick Report

07/07/2023 02:03:45 PM

Data Set: SPEKTRUM D.M ASETON - RawData



[Measurement Properties]
Wavelength Range (nm.): 400.00 to 800.00
Scan Speed: Fast
Sampling Interval: 0.2
Auto Sampling Interval: Disabled
Scan Mode: Single

[Instrument Properties]
Instrument Type: UV-1800 Series
Measuring Mode: Absorbance
Slit Width: 1.0 nm
Light Source Change Wavelength: 340.0 nm
S/R Exchange: Normal

[Attachment Properties]
Attachment: None

[Operation]
Threshold: 0.0010000
Points: 4
InterPolate: Disabled
Average: Disabled

[Sample Preparation Properties]
Weight:
Volume:
Dilution:
Path Length:
Additional Information:

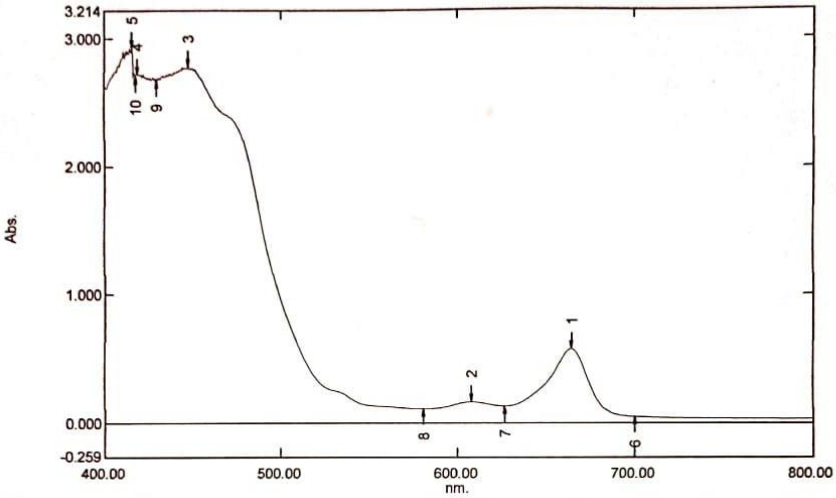
No.	P/V	Wavelength	Abs.	Description
1	●	647.80	3.283	
2	●	631.00	3.051	
3	●	626.40	3.058	
4	●	613.80	3.060	
5	●	598.20	3.057	
6	●	589.40	3.050	
7	●	587.20	3.048	
8	●	574.00	3.033	
9	●	527.80	3.943	
10	●	520.00	3.966	
11	●	507.80	3.994	
12	●	495.20	4.000	
13	●	493.60	4.000	
14	●	486.00	3.998	
15	●	481.20	4.000	
16	●	466.00	3.994	
17	●	456.40	3.967	
18	●	449.40	3.962	
19	●	436.80	3.825	
20	●	432.20	3.873	
21	●	412.20	3.734	
22	●	406.80	3.698	
23	○	634.80	3.030	
24	○	630.20	3.049	

Page 1 / 2

Spectrum Peak Pick Report

07/13/2023 03:06:21 PM

Data Set: SPEKTRUM K.B.N ASETON_130723 - RawData



[Measurement Properties]
Wavelength Range (nm.): 400.00 to 800.00
Scan Speed: Fast
Sampling Interval: 0.2
Auto Sampling Interval: Disabled
Scan Mode: Single

[Instrument Properties]
Instrument Type: UV-1800 Series
Measuring Mode: Absorbance
Slit Width: 1.0 nm
Light Source Change Wavelength: 340.0 nm
S/R Exchange: Normal

[Attachment Properties]
Attachment: None

[Operation]
Threshold: 0.0010000
Points: 4
InterPolate: Disabled
Average: Disabled

[Sample Preparation Properties]
Weight:
Volume:
Dilution:
Path Length:
Additional Information:

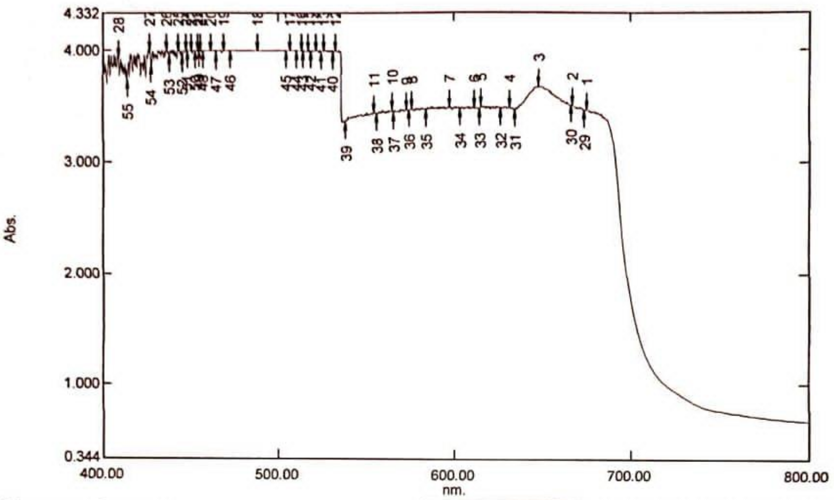
No.	P/V	Wavelength	Abs.	Description
1	⊕	664.40	0.572	
2	⊕	608.00	0.163	
3	⊕	447.20	2.781	
4	⊕	418.40	2.726	
5	⊕	415.60	2.925	
6	⊖	700.00	0.046	
7	⊖	626.80	0.131	
8	⊖	580.80	0.110	
9	⊖	429.80	2.676	
10	⊖	417.60	2.712	

Page 1 / 1

Spectrum Peak Pick Report

07/14/2023 09:30:45 AM

Data Set: SPEKTRUM CAM 2_1_140723 - RawData



[Measurement Properties]	
Wavelength Range (nm.):	400.00 to 800.00
Scan Speed:	Fast
Sampling Interval:	0.2
Auto Sampling Interval:	Disabled
Scan Mode:	Single
[Instrument Properties]	
Instrument Type:	UV-1800 Series
Measuring Mode:	Absorbance
Slit Width:	1.0 nm
Light Source Change Wavelength:	340.0 nm
S/R Exchange:	Normal
[Attachment Properties]	
Attachment:	None
[Operation]	
Threshold:	0.0010000
Points:	4
InterPolate:	Disabled
Average:	Disabled
[Sample Preparation Properties]	
Weight:	
Volume:	
Dilution:	
Path Length:	
Additional Information:	

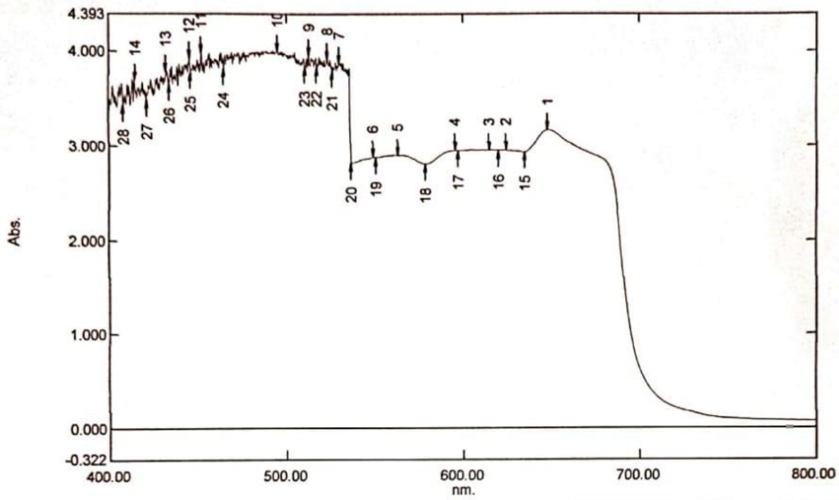
No.	P/V	Wavelength	Abs.	Description
1	●	675.40	3.471	
2	●	667.20	3.515	
3	●	648.40	3.679	
4	●	631.80	3.492	
5	●	615.80	3.503	
6	●	611.60	3.493	
7	●	597.80	3.490	
8	●	576.20	3.480	
9	●	573.40	3.476	
10	●	565.20	3.466	
11	●	554.60	3.444	
12	●	532.60	4.000	
13	●	525.60	4.000	
14	●	521.80	4.000	
15	●	517.40	4.000	
16	●	513.00	4.000	
17	●	506.80	4.000	
18	●	488.00	4.000	
19	●	469.00	4.000	
20	●	461.40	4.000	
21	●	455.60	4.000	
22	●	454.00	4.000	
23	●	450.40	4.000	
24	●	447.60	4.000	

Page 1 / 3

Spectrum Peak Pick Report

07/14/2023 09:25:26 AM

Data Set: SPEKTRUM CAM 1_2_140723 - RawData



[Measurement Properties]
Wavelength Range (nm.): 400.00 to 800.00
Scan Speed: Fast
Sampling Interval: 0.2
Auto Sampling Interval: Disabled
Scan Mode: Single

[Instrument Properties]
Instrument Type: UV-1800 Series
Measuring Mode: Absorbance
Slit Width: 1.0 nm
Light Source Change Wavelength: 340.0 nm
S/R Exchange: Normal

[Attachment Properties]
Attachment: None

[Operation]
Threshold: 0.0010000
Points: 4
InterPolate: Disabled
Average: Disabled

[Sample Preparation Properties]
Weight:
Volume:
Dilution:
Path Length:
Additional Information:

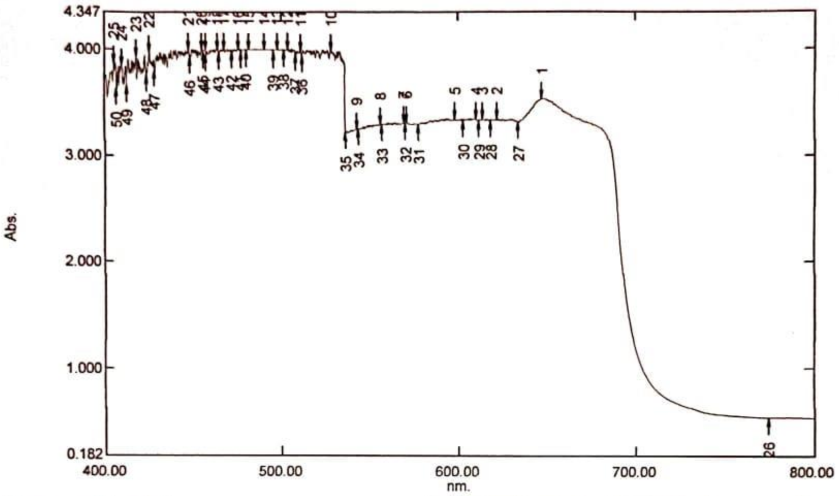
No.	P/V	Wavelength	Abs.	Description
1	↑	648.00	3.169	
2	↑	624.20	2.952	
3	↑	614.80	2.955	
4	↑	595.80	2.950	
5	↑	563.00	2.906	
6	↑	549.20	2.881	
7	↑	529.80	3.880	
8	↑	523.00	3.916	
9	↑	512.40	3.965	
10	↑	495.00	4.000	
11	↑	452.00	3.991	
12	↑	445.20	3.929	
13	↑	432.20	3.798	
14	↑	414.60	3.702	
15	↓	634.60	2.922	
16	↓	620.20	2.944	
17	↓	597.20	2.945	
18	↓	578.40	2.803	
19	↓	550.00	2.874	
20	↓	536.40	2.814	
21	↓	526.00	3.798	
22	↓	517.20	3.836	
23	↓	510.40	3.830	
24	↓	464.60	3.826	

Page 1 / 2

Spectrum Peak Pick Report

07/13/2023 03:11:16 PM

Data Set: CAMPURAN_130723 - RawData



[Measurement Properties]
Wavelength Range (nm.): 400.00 to 800.00
Scan Speed: Fast
Sampling Interval: 0.2
Auto Sampling Interval: Disabled
Scan Mode: Single

[Instrument Properties]
Instrument Type: UV-1800 Series
Measuring Mode: Absorbance
Slit Width: 1.0 nm
Light Source Change Wavelength: 340.0 nm
S/R Exchange: Normal

[Attachment Properties]
Attachment: None

[Operation]
Threshold: 0.0010000
Points: 4
InterPolate: Disabled
Average: Disabled

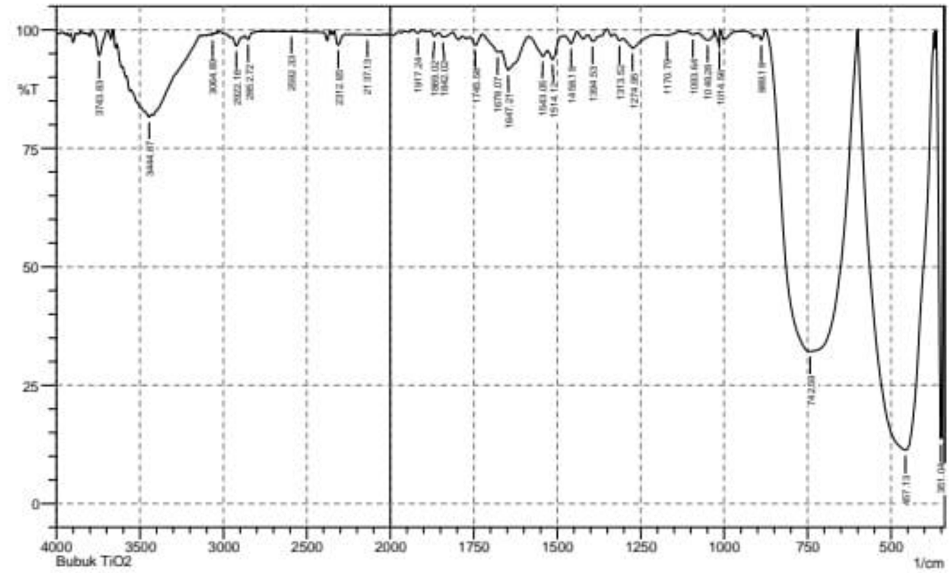
[Sample Preparation Properties]
Weight:
Volume:
Dilution:
Path Length:
Additional Information:

No.	P/V	Wavelength	Abs.	Description
1	●	647.60	3.535	
2	●	622.20	3.345	
3	●	614.00	3.345	
4	●	610.00	3.349	
5	●	598.20	3.347	
6	●	571.40	3.314	
7	●	569.60	3.315	
8	●	556.40	3.297	
9	●	542.60	3.255	
10	●	527.80	3.992	
11	●	510.80	3.994	
12	●	503.60	4.000	
13	●	497.60	4.000	
14	●	490.00	4.000	
15	●	481.80	4.000	
16	●	475.20	4.000	
17	●	467.20	4.000	
18	●	463.60	4.000	
19	●	456.80	4.000	
20	●	454.60	4.000	
21	●	447.20	3.998	
22	●	425.20	3.975	
23	●	417.60	3.938	
24	●	409.40	3.849	

Page 1 / 3

Lampiran 5 Hasil FTIR

SHIMADZU

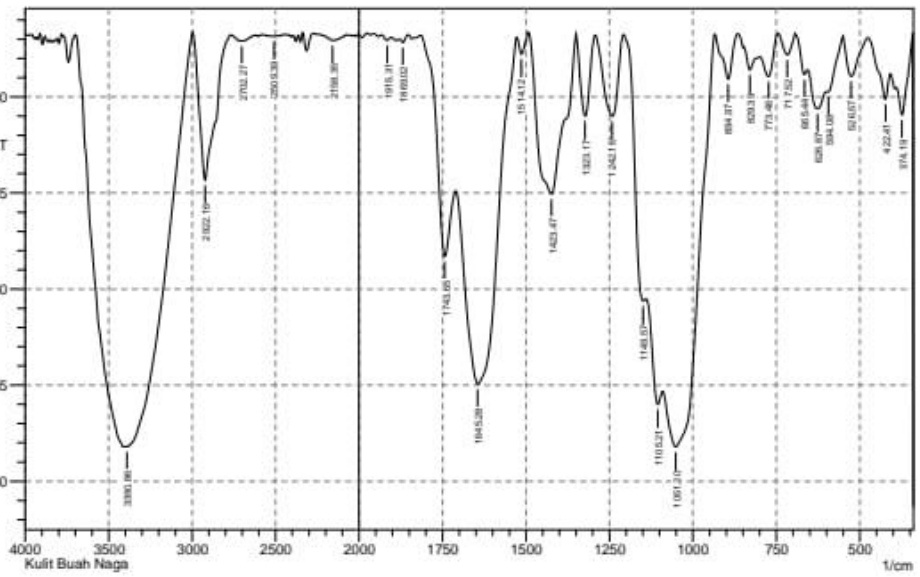


No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	351.04	13.662	73.597	364.55	343.33	8.469	7.338
2	457.13	11.317	88.207	599.86	372.26	121.326	120.989
3	742.59	32.147	67.292	875.68	601.79	85.328	84.63
4	889.18	97.869	1.637	900.76	877.61	0.129	0.08
5	1014.56	96.585	3.326	1029.99	1012.63	0.127	0.119
6	1049.28	97.842	1.822	1080.14	1029.99	0.333	0.246
7	1093.64	99.036	0.41	1114.86	1080.14	0.106	0.027
8	1170.79	98.817	0.391	1193.94	1132.21	0.241	0.053
9	1274.95	96.127	2.267	1301.95	1209.37	0.962	0.383
10	1313.52	97.767	0.786	1328.95	1301.95	0.205	0.042
11	1394.53	97.616	1.614	1408.04	1352.1	0.341	0.229
12	1458.18	97.121	2.111	1477.47	1440.83	0.292	0.165
13	1514.12	93.772	2.92	1529.55	1485.19	0.796	0.239
14	1543.05	94.428	1.876	1587.42	1529.55	0.931	0.186
15	1647.21	91.536	4.752	1666.5	1587.42	2.002	0.985
16	1678.07	95.346	0.826	1724.36	1668.43	0.759	0.097
17	1745.58	96.75	2.004	1762.94	1724.36	0.365	0.16
18	1842.02	98.481	0.962	1855.52	1813.09	0.199	0.1
19	1869.02	98.707	0.915	1882.52	1855.52	0.092	0.047
20	1917.24	99.347	0.629	1930.74	1903.74	0.041	0.038
21	2137.13	98.962	0.028	2152.56	2125.56	0.12	0.002
22	2312.65	96.804	2.691	2337.72	2268.29	0.542	0.361
23	2592.33	99.68	0.023	2632.83	2576.9	0.074	0.003
24	2852.72	98.013	0.906	2872.01	2789.07	0.345	0.054
25	2922.16	96.632	1.883	2951.09	2872.01	0.751	0.25
26	3064.89	98.854	0.436	3082.25	3062.96	0.084	0.017
27	3444.87	81.622	1.074	3554.81	3431.36	9.439	0.51
28	3743.83	94.618	5.271	3786.27	3693.68	0.938	0.898

Comment;
Bubuk TiO2

Date/Time; 7/31/2023 1:33:43 PM
No. of Scans;
Resolution;
Apodization;

SHIMADZU



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	374.19	87.188	6.799	389.62	343.33	1.782	0.828
2	422.41	89.641	5.106	474.49	408.91	1.764	0.684
3	526.57	93.234	6.172	549.71	476.42	1.252	1.045
4	594.08	90.766	1.071	599.86	551.64	1.182	0.14
5	626.87	88.185	4.196	655.8	601.79	2.496	0.649
6	665.44	93.498	2.118	694.37	655.8	0.649	0.138
7	717.52	96.574	3.289	744.52	694.37	0.439	0.409
8	773.46	93.203	4.7	798.53	744.52	1.021	0.569
9	829.39	94.244	2.918	848.68	800.46	0.907	0.27
10	894.97	92.786	7.036	933.55	866.04	1.08	1.026
11	1051.2	35.363	22.578	1089.78	935.48	45.168	17.931
12	1105.21	41.981	6.064	1139.93	1091.71	15.514	1.246
13	1149.57	58.137	5.156	1207.44	1141.86	7.59	0.845
14	1242.16	87.006	12.605	1290.38	1209.37	2.826	2.685
15	1323.17	87.025	12.382	1348.24	1292.31	1.845	1.706
16	1423.47	74.841	25.037	1490.97	1350.17	10.564	10.485
17	1514.12	96.711	2.889	1527.62	1492.9	0.283	0.236
18	1645.28	45.174	38.558	1708.93	1529.55	36.206	24.919
19	1743.65	65.134	17.961	1813.09	1710.86	9.645	3.403
20	1869.02	98.498	0.769	1878.67	1853.59	0.111	0.04
21	1915.31	98.831	0.608	1932.67	1901.81	0.111	0.039
22	2158.35	98.823	0.93	2268.29	2075.41	0.566	0.369
23	2509.39	99.453	0.254	2578.83	2443.81	0.26	0.087
24	2702.27	98.711	0.925	2769.78	2623.19	0.56	0.327
25	2922.16	77.023	22.81	2995.45	2771.71	11.284	11.076
26	3390.86	35.4	1.26	3398.57	2997.38	99.09	10.059

Comment;
Kulit Buah Naga

Date/Time; 7/31/2023 1:21:47 PM
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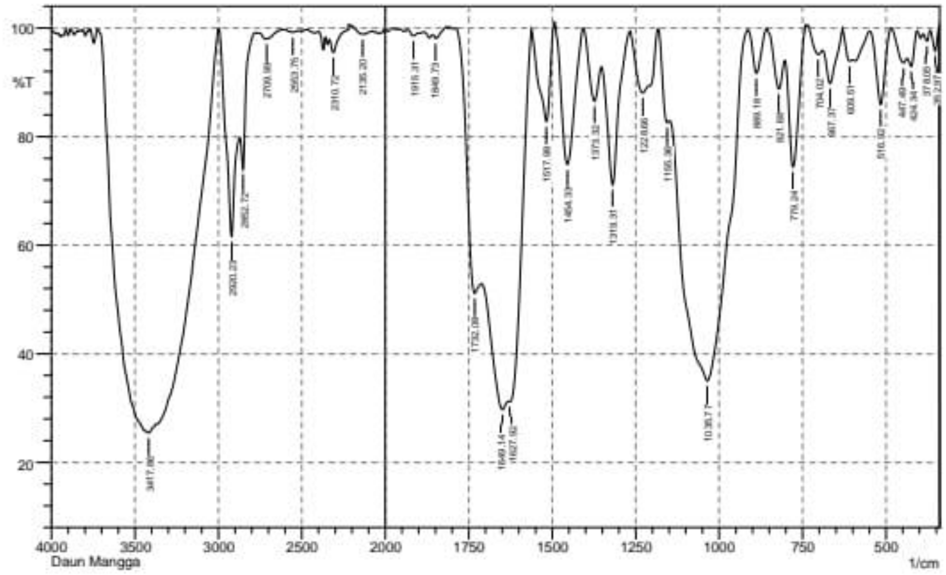
Resolution;
Apodization;

SHIMADZU



No.	Peak	Intensity	Corr. Intensity	Base (H)	Base (L)	Area	Corr. Area
1	352.97	95.8032	4.0605	368.4	341.4	0.2623	0.2411
2	378.05	97.5779	1.6539	389.62	368.4	0.152	0.0783
3	424.34	92.9697	3.6624	437.84	406.98	0.6707	0.2506
4	447.49	93.5725	2.0151	484.13	437.84	0.8318	0.2561
5	516.92	85.924	13.724	547.78	486.06	1.8666	1.7743
6	609.51	93.8963	1.9929	630.72	599.86	0.6003	0.181
7	667.37	89.7793	7.4958	688.59	630.72	1.6003	1.0561
8	704.02	95.1354	2.0794	736.81	690.52	0.6123	0.2382
9	779.24	74.4629	21.9785	802.39	740.67	4.061	3.3272
10	821.68	88.7907	7.1495	856.39	804.32	1.5562	0.814
11	889.18	91.664	8.0746	912.33	858.32	1.0274	0.9723
12	1035.77	35.0255	55.894	1147.65	914.26	60.9955	51.3809
13	1155.36	82.588	3.288	1182.36	1149.57	1.7599	0.3615
14	1228.66	88.0657	4.4707	1265.3	1211.3	2.2144	0.7651
15	1319.31	71.1571	24.1787	1352.1	1267.23	5.7188	4.2527
16	1373.32	86.5419	8.8617	1406.11	1354.03	2.0721	1.1817
17	1454.33	74.8758	25.6646	1492.9	1408.04	5.1404	5.3154
18	1517.98	82.7832	17.4904	1560.41	1494.83	2.8904	2.9023
19	1627.92	31.171	1.9839	1629.85	1562.34	17.5744	1.6786
20	1649.14	29.7367	6.228	1710.86	1631.78	33.4751	2.5364
21	1732.08	51.1645	13.7771	1788.01	1712.79	12.4834	2.4729
22	1849.73	98.05	0.9471	1857.45	1815.02	0.174	0.0772
23	1915.31	98.5529	0.7969	1932.67	1899.88	0.1481	0.0575
24	2135.2	98.8411	1.0164	2220.07	2081.19	0.3194	0.3099
25	2310.72	95.4948	2.6773	2331.94	2225.85	0.9787	0.3944
26	2553.75	99.204	0.3844	2605.83	2515.18	0.2334	0.0781
27	2709.99	97.9891	1.3032	2754.35	2615.47	0.7508	0.3881
28	2852.72	74.0561	9.4413	2870.08	2781.35	4.4041	0.8764
29	2920.23	61.6092	25.8858	2997.38	2872.01	13.7626	7.4871
30	3417.86	25.4442	11.9148	3707.18	3369.64	137.0067	40.0879

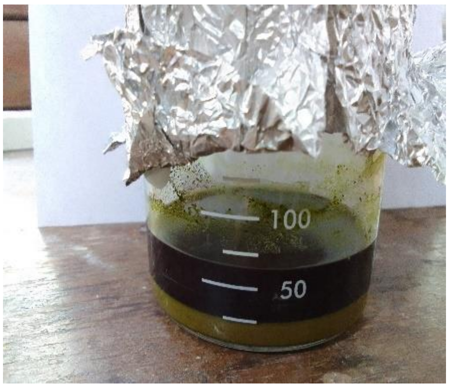
Comment;
Daun Mangga

Date/Time; 7/31/2023 1:09:15 PM
No. of Scans;
Resolution;
Apodization;

Lampiran 6 Dokumentasi Penelitian

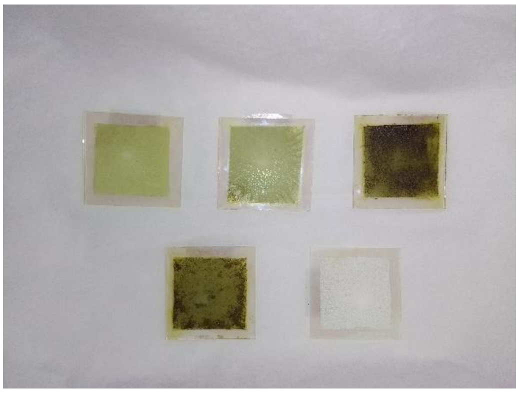

Sampel dikeringkan menggunakan oven


Sampel yang telah menjadi bubuk



Maserasi sampel selama 24 jam

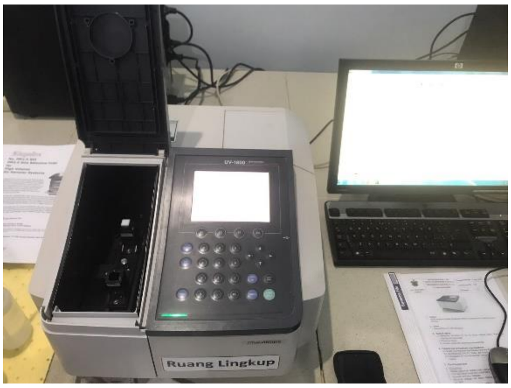

Desposisi pasta TiO_2 dengan teknik *spin coating*


Elektroda kerja


Elektroda lawan

Pembuatan larutan elektrolit

Fabrikasi sel DSSC



Uji UV-Vis

Karakterisasi FTIR

Karakterisasi XRD

Pengujian Arus-Tegangan DSSC