





LAMPIRAN 1 DOKUMENTASI PENELITIAN

	
<p>Karbonisasi limbah serabut dan tempurung nipah</p>	<p>Penghalusan dan pengayakan karbon</p>
	
<p>Pembuatan larutan aktivator KMnO_4</p>	<p>Aktivasi karbon oleh aktivator KMnO_4</p>



Penyaringan karbon dengan kertas saring



Pengeringan Karbon aktif dengan oven pada suhu 105°C



Uji kadar abu dengan furnice



Pengadukan sampel dengan magnetic stirer untuk pengujian daya serap iodin



Titrasi untuk pengujian daya serap iodin



Pengemasan adsorben karbon aktif dalam kemasan *saschet*



Pengujian adsorben karbon aktif terhadap lama masa simpan pisang kepek variasi sampel 2 gr



Pengujian adsorben karbon aktif terhadap lama masa simpan pisang kepek variasi sampel 3gr

LAMPIRAN 2 PERHITUNGAN PEMBUATAN LARUTAN AKTIVATOR

1. Konsentrasi aktivator KMnO_4 5%

Diketahui :

5% : Konsentrasi Aktivator

250 ml : volume pelarut

Maka Berat KMnO_4 (m)?

$$5\% = \frac{m}{250 \text{ ml}} \times 100\%$$

$$\frac{m}{250 \text{ ml}} \times \frac{5\%}{100\%}$$

$$\frac{m}{250 \text{ ml}} \times \frac{1}{20}$$

$$m = \frac{250}{20}$$

$$m = 12,5 \text{ gr}$$

2. Konsentrasi aktivator KMnO_4 10%

Diketahui :

10% : Konsentrasi Aktivator

250 ml : volume pelarut

Maka Berat KMnO_4 (m)?

$$5\% = \frac{m}{250 \text{ ml}} \times 100\%$$

$$\frac{m}{250 \text{ ml}} \times \frac{10\%}{100\%}$$

$$\frac{m}{250 \text{ ml}} \times \frac{1}{10}$$

$$m = \frac{250}{10}$$

$$m = 25 \text{ gr}$$

LAMPIRAN 3 PERHITUNGAN UJI KARAKTERISTIK KARBON AKTIF

1. DATA HASIL UJI KARAKTERISTIK KARBON AKTIF

Pengujian	Ukuran Karbon Aktif	Konsentrasi Aktivator KMnO ₄	Pengujian 1	Pengujian 2	Rata-rata	SNI 06-3730-1995
Daya Serap Iodin (mg/g)	200 mesh	Tanpa aktivasi	761,4	761,4	761,4	Min. 750
		5%	812,16	786,78	799,47	
		10%	799,47	761,4	780,435	
	100 mesh	Tanpa aktivasi	761,4	761,4	761,4	
		5%	799,47	761,4	780,435	
		10%	761,4	786,78	774,09	
Kadar air (%)	200 mesh	Tanpa aktivasi	1	2	1,5	Maks. 15
		5%	2	1	1,5	
		10%	3	4	3,5	
	100 mesh	Tanpa aktivasi	3	2	2,5	
		5%	3	4	3,5	
		10%	4	4	4	
Kadar abu (%)	200 mesh	Tanpa aktivasi	3	2	2,5	Maks. 10
		5%	3	3,2	3,1	
		10%	4,5	4	4,25	
	100 mesh	Tanpa aktivasi	2	3	2,25	
		5%	2,5	3	2,75	

Pengujian	Ukuran Karbon Aktif	Konsentrasi Aktivator KMnO ₄	Pengujian 1	Pengujian 2	Rata-rata	SNI 06-3730-1995
		10%	4	4	4	

2. DAYA SERAP IODIN

$$I \text{ mg/g} = \frac{\left(10 - \frac{V \times N}{0,1}\right) \times 12,69 \times 5}{w}$$

Keterangan :

V = Larutan Natrium tio-sulfat yang diperlukan (ml)

N = Normalitas larutan natrum tio-sulfat

12,69 = Jumlah iodin sesuai dengan 1 ml larutan natrium tio-sulfat 0,1 N

w = Contoh (gram)

a. Sampel K₂₀₀A₀

$$V = 3,75 \text{ ml}$$

$$N = 0,1 \text{ N}$$

$$w = 0,5 \text{ gr}$$

$$I \text{ mg/g} = \frac{\left(10 - \frac{3,75 \times 0,1}{0,1}\right) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{(10 - 4) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{6 \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{380,7}{0,5}$$

$$I = 761,4 \text{ mg/g}$$

b. Sampel K₁₀₀A₀

$$V = 4 \text{ ml}$$

$$N = 0,1 \text{ N}$$

$$w = 0,5 \text{ gr}$$

$$I \text{ mg/g} = \frac{\left(10 - \frac{4 \times 0,1}{0,1}\right) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{(10 - 4) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{6 \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{380,7}{0,5}$$

$$I = 761,4 \text{ mg/g}$$

c. Sampel K₂₀₀A₅

$$V = 3,75 \text{ ml}$$

$$N = 0,1 \text{ N}$$

$$w = 0,5 \text{ gr}$$

$$I \text{ mg/g} = \frac{\left(10 - \frac{3,7 \times 0,1}{0,1}\right) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{(10 - 3,75) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{6,25 \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{399,735}{0,5}$$

$$I = 799,47 \text{ mg/g}$$

d. Sampel K₁₀₀A₅

$$V = 3,85 \text{ ml}$$

$$N = 0,1 \text{ N}$$

$$w = 0,5 \text{ gr}$$

$$I \text{ mg/g} = \frac{\left(10 - \frac{3,85 \times 0,1}{0,1}\right) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{(10 - 3,85) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{6,15 \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{390,21}{0,5}$$

$$I = 780,435 \text{ mg/g}$$

e. **Sampel K₂₀₀A₁₀**

$$V = 3,85 \text{ ml}$$

$$N = 0,1 \text{ N}$$

$$w = 0,5 \text{ gr}$$

$$I \text{ mg/g} = \frac{\left(10 - \frac{3,85 \times 0,1}{0,1}\right) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{(10 - 3,85) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{6,15 \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{390,21}{0,5}$$

$$I = 780,435 \text{ mg/g}$$

f. **Sampel A₁₀ K₁₀₀A₁₀**

$$V = 3,9 \text{ ml}$$

$$N = 0,1 \text{ N}$$

$$w = 0,5 \text{ gr}$$

$$I \text{ mg/g} = \frac{\left(10 - \frac{3,9 \times 0,1}{0,1}\right) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{(10 - 3,9) \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{6,1 \times 12,69 \times 5}{0,5}$$

$$I \text{ mg/g} = \frac{387,045}{0,5}$$

$$I = 774,09 \text{ mg/g}$$

3. KADAR AIR

$$\text{Kadar air (\%)} = \frac{w_1}{w_2} \times 100$$

Dimana :

W1 : Kehilangan Bobot (gram)

W2 : Bobot Contoh (gram)

a. Sampel K₂₀₀A₀

$$W1 = 0,015 \text{ gr}$$

$$W2 = 1 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w1}{w2} \times 100$$

$$\text{Kadar air (\%)} = \frac{0,015}{1} \times 100$$

$$\text{Kadar air (\%)} = 1,5$$

b. Sampel K₁₀₀A₀

$$W1 = 0,025 \text{ gr}$$

$$W2 = 1 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w1}{w2} \times 100$$

$$\text{Kadar air (\%)} = \frac{0,025}{1} \times 100$$

$$\text{Kadar air (\%)} = 2,5$$

c. Sampel K₂₀₀A₅

$$W1 = 0,015 \text{ gr}$$

$$W2 = 1 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w1}{w2} \times 100$$

$$\text{Kadar air (\%)} = \frac{0,015}{1} \times 100$$

$$\text{Kadar air (\%)} = 1,5$$

d. Sampel K₁₀₀A₅

$$W1 = 0,01 \text{ gr}$$

$$W2 = 1 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w1}{w2} \times 100$$

$$\text{Kadar air (\%)} = \frac{0,03}{1} \times 100$$

$$\text{Kadar air (\%)} = 3$$

e. Sampel K₂₀₀A₁₀

$$W_1 = 0,035 \text{ gr}$$

$$W_2 = 1 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w_1}{w_2} \times 100$$

$$\text{Kadar air (\%)} = \frac{0,035}{1} \times 100$$

$$\text{Kadar air (\%)} = 3,5$$

f. Sampel K₁₀₀A₁₀

$$W_1 = 0,04 \text{ gr}$$

$$W_2 = 1 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w_1}{w_2} \times 100$$

$$\text{Kadar air (\%)} = \frac{0,04}{1} \times 100$$

$$\text{Kadar air (\%)} = 4$$

4. KADAR ABU

$$\text{Kadar abu (\%)} = \frac{w_1}{w_2} \times 100$$

Dimana :

W₁ : Sisa Pijar (gram)

W₂ : Bobot Contoh (gram)

a. Sampel K₂₀₀A₀

$$W_1 = 0,062 \text{ gr}$$

$$W_2 = 2 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w_1}{w_2} \times 100$$

$$\text{Kadar air (\%)} = \frac{0,062}{2} \times 100$$

$$\text{Kadar air (\%)} = 3,1$$

b. Sampel K₁₀₀A₀

$$W1 = 0,055 \text{ gr}$$

$$W2 = 2 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w1}{w2} \times 100$$

$$\text{Kadar air (\%)} = \frac{0,055}{2} \times 100$$

$$\text{Kadar air (\%)} = 2,75$$

c. Sampel K₂₀₀A₅

$$W1 = 0,05 \text{ gr}$$

$$W2 = 2 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w1}{w2} \times 100$$

$$\text{Kadar air (\%)} = \frac{0,05}{2} \times 100$$

$$\text{Kadar air (\%)} = 2,5$$

d. Sampel K₁₀₀A₅

$$W1 = 0,045 \text{ gr}$$

$$W2 = 2 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w1}{w2} \times 100$$

$$\text{Kadar air (\%)} = \frac{0,045}{2} \times 100$$

$$\text{Kadar air (\%)} = 2,25$$

e. Sampel K₂₀₀A₁₀

$$W1 = 0,085 \text{ gr}$$

$$W2 = 2 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w1}{w2} \times 100$$

$$\text{Kadar air (\%)} = \frac{0,085}{2} \times 100$$

$$\text{Kadar air (\%)} = 4,25$$

f. Sampel K₁₀₀A₁₀

$$W1 = 0,04 \text{ gr}$$

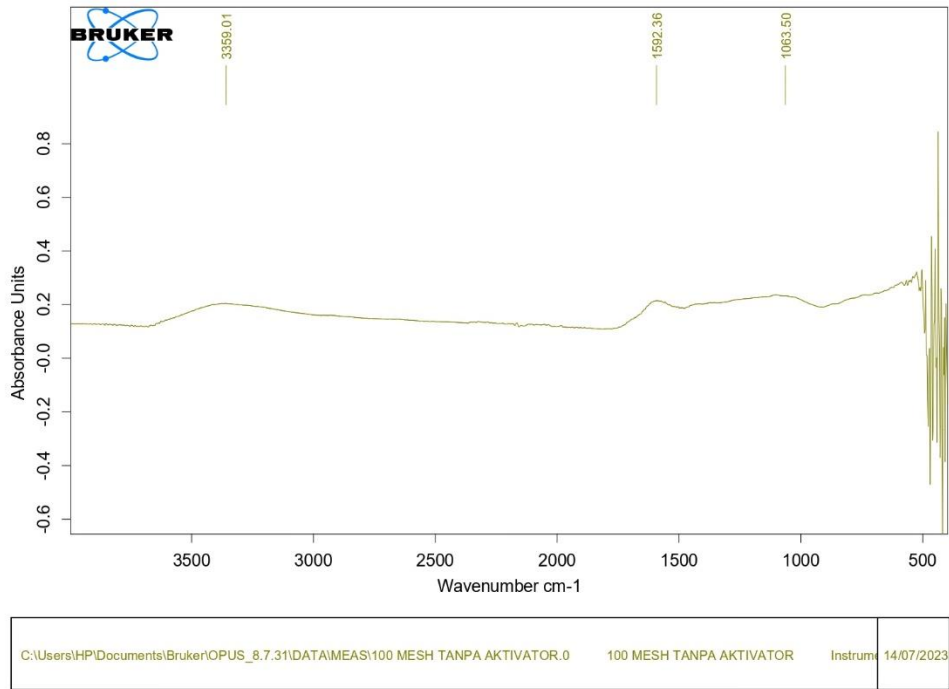
$$W2 = 1 \text{ gr}$$

$$\text{Kadar air (\%)} = \frac{w_1}{w_2} \times 100$$

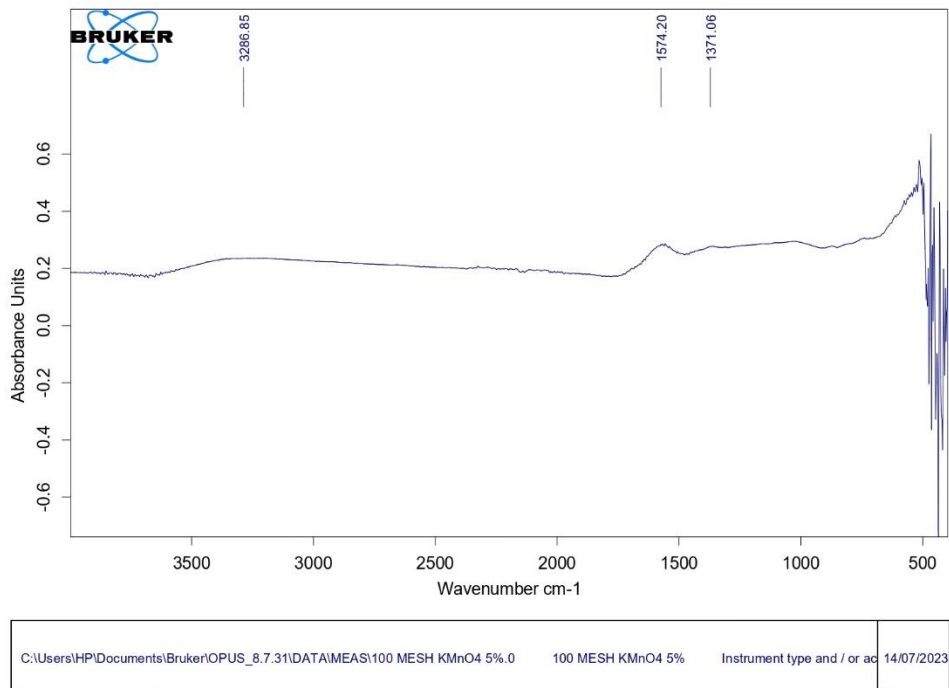
$$\text{Kadar air (\%)} = \frac{0,08}{2} \times 100$$

$$\text{Kadar air (\%)} = 4$$

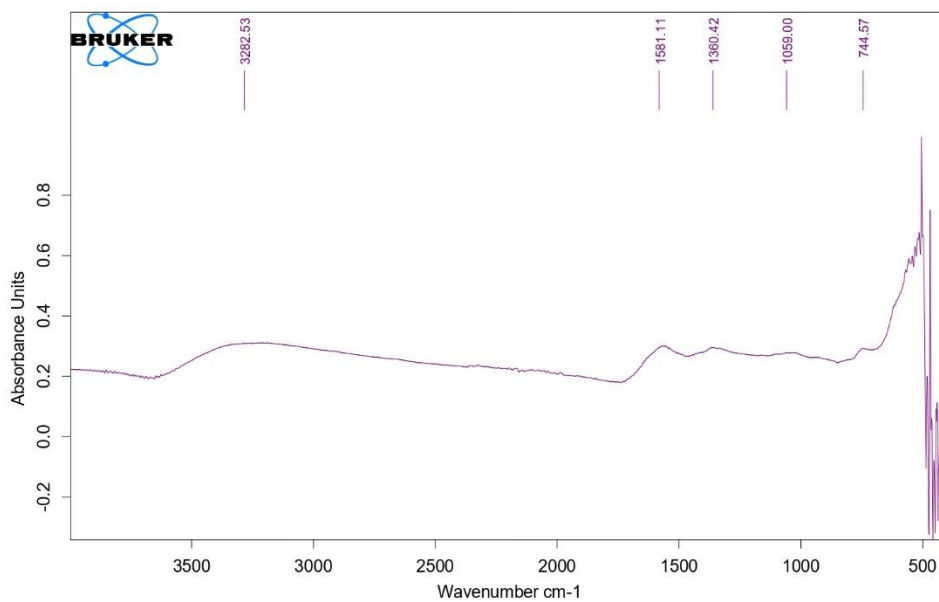
LAMPIRAN 4 ANALISIS GUGUS FUNGSI FTIR



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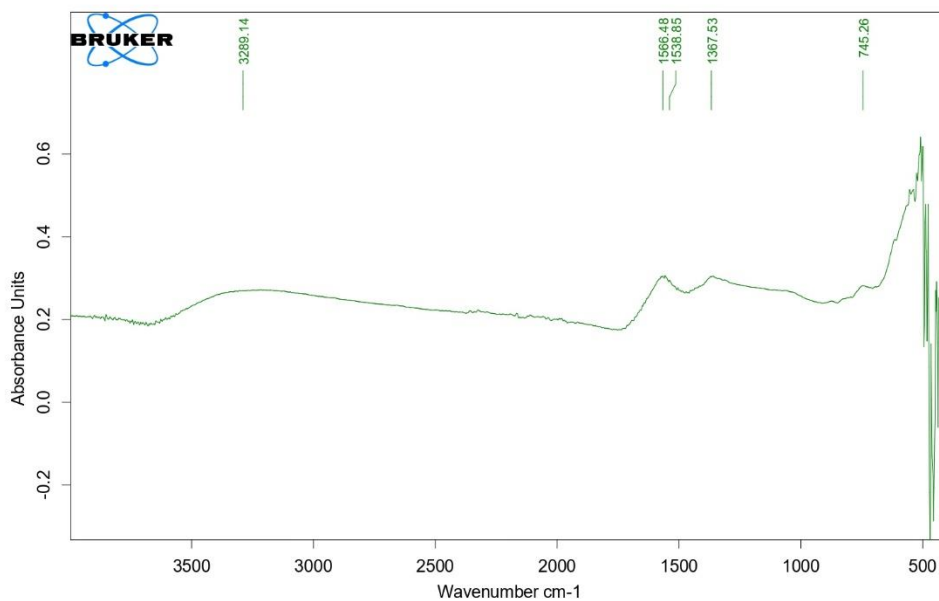


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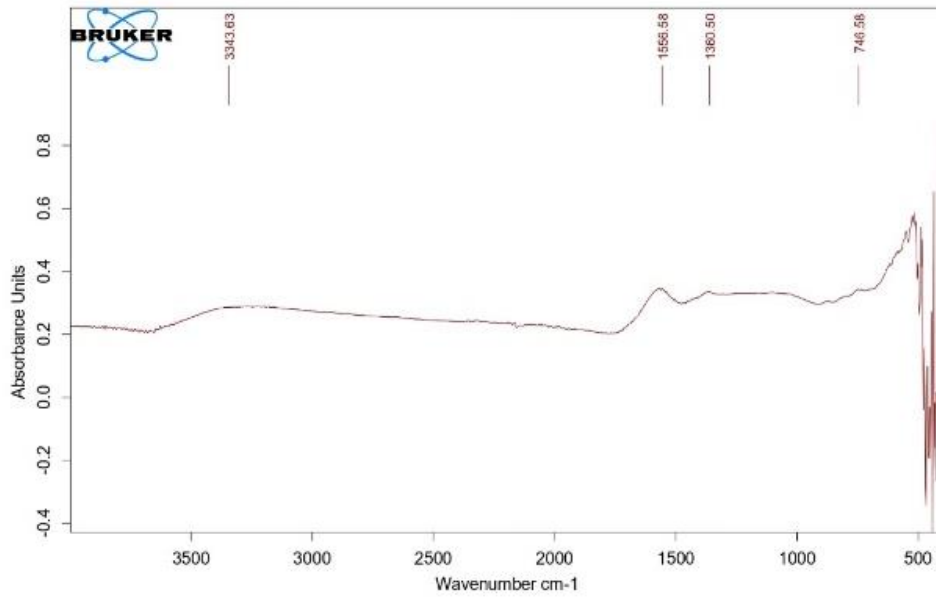
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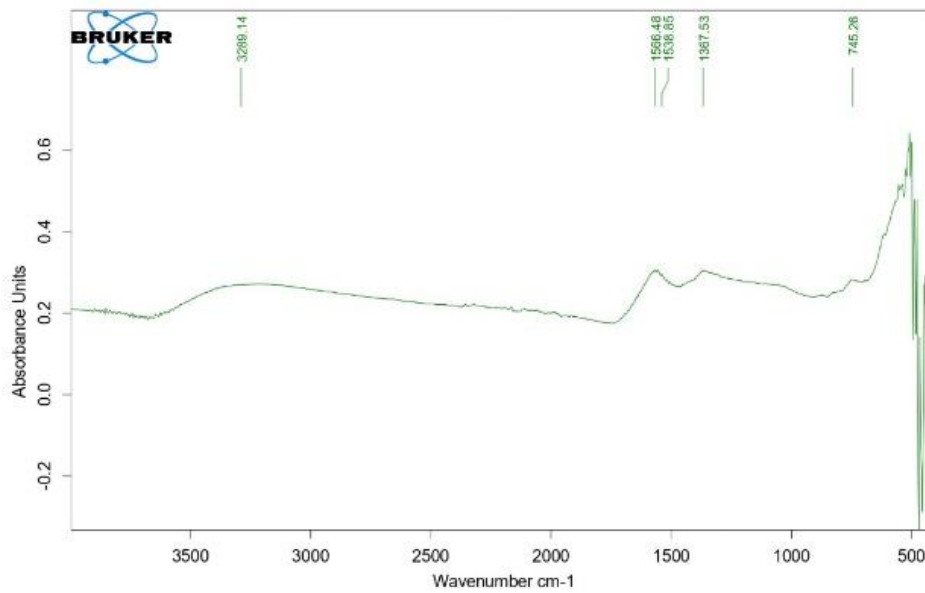


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LAMPIRAN 5 PERHITUNGAN APLIKASI ADSORBEN KARBON AKTIF TERHADAP PISANG KEPOK

1. SUSUT BOBOT (%)

$$\text{Susut Bobot (\%)} = \frac{W - W_a}{W} \times 100 \dots \dots \dots (4.5)$$

Keterangan :

W = bobot bahan pada awal penyimpanan (g)

W_a = bobot bahan pada hari ke-n penyimpanan (g)

K₀M₀A₀C₁ (Kontrol Tanpa Perlakuan)

Hari ke-2

$$W = 80$$

$$W_a = 72$$

$$\text{Susut Bobot (\%)} = \frac{(W - W_a)}{W} \times 100$$

$$\text{Susut Bobot (\%)} = \frac{(80 - 72)}{80} \times 100$$

$$\text{Susut Bobot (\%)} = \frac{8}{80} \times 100$$

$$\text{Susut Bobot (\%)} = 10$$

Hari ke-4

$$W = 80$$

$$W_a = 66$$

$$\text{Susut Bobot (\%)} = \frac{(W - W_a)}{W} \times 100$$

$$\text{Susut Bobot (\%)} = \frac{(80 - 66)}{80} \times 100$$

$$\text{Susut Bobot (\%)} = \frac{14}{80} \times 100$$

$$\text{Susut Bobot (\%)} = 17,5$$

Hari ke-6

$$W = 80$$

$$W_a = 54$$

$$\text{Susut Bobot (\%)} = \frac{(W - Wa)}{W} \times 100$$

$$\text{Susut Bobot (\%)} = \frac{(80 - 54)}{80} \times 100$$

$$\text{Susut Bobot (\%)} = \frac{26}{80} \times 100$$

$$\text{Susut Bobot (\%)} = 32,5$$

Tabel. Hasil Perhitungan Susut Bobot pisang kepok (%)

Nama sampel	Berat adsorben (gr)	Susut Bobot Pisang Kepok (%)				
		Hari ke-2	Hari Ke-4	Hari ke-6	Hari ke-8	Hari ke-10
K ₀ M ₀ A ₀ C ₁	-	10	17,5	32,5		
K ₀ M ₀ A ₀ C ₂		0	1,19	5,95		
K ₂₀₀ M ₂ A ₀	2	0	1,23	1,23	2,4	
K ₁₀₀ M ₂ A ₀		0	1,2	2,4	3,6	
K ₂₀₀ M ₂ A ₅		1	1,2	2,4	3,6	4,76
K ₁₀₀ M ₂ A ₅		1,16	1,16	2,38	3,4	4,65
K ₂₀₀ M ₂ A ₁₀		1,23	2,46	2,46	4,93	
K ₁₀₀ M ₂ A ₁₀		1,17	3,52	3,52	5,8	
K ₂₀₀ M ₃ A ₀	3	1,78	1,78	2,68		
K ₁₀₀ M ₃ A ₀		0	0,8	1,7		
K ₂₀₀ M ₃ A ₅		0,85	1,7	1,7		
K ₁₀₀ M ₃ A ₅		0,84	1,6	2,5		
K ₂₀₀ M ₃ A ₁₀		1,6	1,7	3,4		
K ₁₀₀ M ₃ A ₁₀		0,85	0,85	1,7		

LAMPIRAN 5 PUBLIKASI JURNAL

The screenshot shows a web interface for a journal submission. At the top, there is a navigation bar with 'Jurnal Teknik Kimia' on the left, 'Tasks' in the center, and 'English', 'View Site', and 'shafasbl' on the right. Below this is a blue header with 'Submission Library' and 'View Metadata'. The main content area has a title 'Adsorben Karbon Aktif Teraktivasi KMnO4 sebagai Penjerap Gas Etilen untuk Memperpanjang Masa Simpan Pisang Kepok' and authors 'Shafa sahsabila, Theresia Evila Purwandu Sri Rahayu, Dodi Satriawan'. There are tabs for 'Submission', 'Review', 'Copyediting', and 'Production'. Under 'Submission Files', there is a table with one entry: '7794-1 shafasbl, Author; JURNAL UPLOAD.docx' with 'Article Text' as the type. A 'Download All Files' button is present. Below this is a 'Pre-Review Discussions' section with a table header: 'Name', 'From', 'Last Reply', 'Replies', and 'Closed'. The table body contains 'No Items'.

Jurnal Teknik Kimia Tasks English View Site shafasbl

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Adsorben Karbon Aktif Teraktivasi KMnO4 sebagai Penjerap Gas Etilen untuk Memperpanjang Masa Simpan Pisang Kepok
Shafa sahsabila, Theresia Evila Purwandu Sri Rahayu, Dodi Satriawan

Submission Review Copyediting Production

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Pre-Review Discussions Add discussion

Name	From	Last Reply	Replies	Closed
No Items				

RIWAYAT HIDUP PENULIS



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Riwayat Pendidikan

1. SDN Tritihkulon 05 2007-2013
2. SMP Negeri 5 Cilacap 2013-2016
3. SMK Negeri 1 Cilacap 2016-2019
4. Politeknik Negeri Cilacap 2019-2023

Penulis telah mengikuti seminar Tugas Akhir pada 09 Agusturs 2023 sebagai salah satu persyaratan untuk memperoleh gelar Sarjana Terapan (S. Tr).