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# LAMPIRAN

**LAMPIRAN A**

**PERHITUNGAN HASIL ANALISIS**

**PROKSIMAT**

## Perhitungan Hasil Analisis Proksimat Sampel Batubara Awal

### A. Perhitungan untuk Menentukan Lengas (*Inherent Moisture*) (%)

- Berat wadah tanpa penutup (gr): gr
- Berat wadah tanpa penutup + sampel (gr): gr
- Berat krus tanpa penutup + sampel setelah proses pemanasan (gr): gr
- Rumus untuk menentukan persentase kandungan air:

$$IM (\%) = \frac{(B - A) - (C - A)}{B - A} \times 100$$

Di mana:

IM = Kelembaban bawaan (%)

A = Berat wadah tanpa penutup (gr)

B = Berat wadah tanpa penutup + sampel (gr)

C = Berat wadah tanpa penutup + sampel setelah proses pemanasan (gr)

- Kandungan air sampel batubara awal:

$$IM (\%) = \frac{(11.6037 \text{ gr} - 10.6034 \text{ gr}) - (11.5773 \text{ gr} - 10.6034 \text{ gr})}{11.6037 \text{ gr} - 10.6034 \text{ gr}} \times 100$$

$$IM (\%) = 2,63$$

### B. Perhitungan untuk Menentukan Kandungan Abu (*Ash Content*) (%)

- Berat wadah tanpa penutup (gr): gr
- Berat wadah tanpa penutup + sampel (gr): gr
- Berat wadah tanpa penutup + sampel setelah proses pemanasan (gr): gr
- Rumus untuk menentukan persentase kandungan abu:

$$AC (\%) = \frac{(C - A)}{B - A} \times 100$$

Di mana:

AC = Kandungan abu (%)

A = Berat wadah tanpa penutup (gr)

B= Berat wadah tanpa penutup + sampel (gr)

C= Berat wadah tanpa penutup + sampel setelah proses pemanasan (gr)

➤ Kandungan abu sampel batubara awal:

$$AC (\%) = \frac{11.3777 \text{ gr} - 11.2897 \text{ gr}}{12.2903 \text{ gr} - 11.2897 \text{ gr}} \times 100$$

$$AC (\%) = 8,79$$

#### C. Perhitungan untuk Menentukan Zat Terbang (*Volatile Matter*) (%)

- Berat wadah dengan penutup (gr): gr
- Berat wadah dengan penutup + sampel (gr): gr
- Berat wadah dengan penutup + sampel setelah proses pemanasan (gr): gr
- Rumus untuk menentukan persentase volatile matter:

$$VM (\%) = \left[ \frac{(B - A) - (C - A)}{B - A} \times 100 \right]$$

Di mana:

VM = Materi yang mudah menguap (%)

A= Berat wadah dengan penutup (gr)

B= Berat wadah dengan penutup + Sampel (gr)

C= Berat wadah dengan penutup + Sampel setelah proses pemanasan (gr)

➤ Materi yang mudah menguap dari sampel batubara awal:

$$VM (\%) = \left[ \frac{(18.7936 \text{ gr} - 17.7934 \text{ gr}) - (18.3849 - 17.7934)}{18.7936 \text{ gr} - 17.7934 \text{ gr}} \times 100 \right]$$

$$VM (\%) = 38,23$$

#### D. Perhitungan untuk Menentukan Karbon Tetap (%)

➤ Rumus dan perhitungan untuk menentukan persentase fixed carbon (FC):

$$FC (\%) = 100 - (IM (\%) + AC (\%) + VM (\%))$$

$$FC (\%) = 100 - (2,63 + 8,76 + 38,23)$$

$$FC (\%) = 50,35$$



## Perhitungan dalam Analisis Kandungan Abu Sampel Batubara yang Diaglomerasi

➤ Aglomerasi batubara menggunakan Oli Bekas

➤ Data A (gr), B (gr), dan C (gr) Sampel Batubara Teraglomerasi

| Kode Eksperimen    | Berat wadah tanpa penutup (gr) | Berat wadah tanpa penutup + sampel (gr) | Berat krus tanpa penutup + sampel setelah proses pemanasan (gr) |
|--------------------|--------------------------------|---|---|
| 40 <i>Mesh</i> 5%  | 11,4740                        | 12,4743                                 | 11,5192   |
| 40 <i>Mesh</i> 10% | 10,8021                        | 11,8030                                 | 10,8398   |
| 40 <i>Mesh</i> 15% | 10,5786                        | 11,5789                                 | 10,6214   |
| 65 <i>Mesh</i> 5%  | 11,4924                        | 12,4925                                 | 11,5237   |
| 65 <i>Mesh</i> 10% | 11,3007                        | 12,3012                                 | 11,3442   |
| 65 <i>Mesh</i> 15% | 10,5499                        | 11,5502                                 | 10,5934   |
| 80 <i>Mesh</i> 5%  | 11,1564                        | 12,1570                                 | 11,1856   |
| 80 <i>Mesh</i> 10% | 11,2905                        | 12,2906                                 | 11,3306   |
| 80 <i>Mesh</i> 15% | 10,1802                        | 11,1802                                 | 10,2416   |

➤ Perhitungan Kandungan Abu Sampel Batubara yang Diaglomerasi

1. Kandungan Abu 40 *Mesh* 5%

$$AC (\%) = \frac{11,5192 \text{ gr} - 11,4740 \text{ gr}}{12,4743 \text{ gr} - 11,4740 \text{ gr}} \times 100$$

$$AC (\%) = 4,51$$

2. Kandungan 40 *Mesh* 10%

$$AC (\%) = \frac{10,8398 \text{ gr} - 10,8021 \text{ gr}}{11,8030 \text{ gr} - 10,8021 \text{ gr}} \times 100$$

$$AC (\%) = 3,76$$

3. Kandungan Abu 40 *Mesh* 15%

$$AC (\%) = \frac{10,6214 \text{ gr} - 10,5786 \text{ gr}}{11,5789 \text{ gr} - 10,5786 \text{ gr}} \times 100$$

$$AC (\%) = 4,27$$

4. Kandungan Abu 65 *Mesh* 5%

$$AC (\%) = \frac{11,5237 \text{ gr} - 11,4924 \text{ gr}}{12,4925 \text{ gr} - 11,4924 \text{ gr}} \times 100$$

$$AC (\%) = 3,12$$

5. Kandungan Abu 65 *Mesh* 10%

$$AC (\%) = \frac{11,3442 \text{ gr} - 11,3007 \text{ gr}}{12,3012 \text{ gr} - 11,3007 \text{ gr}} \times 100$$

$$AC (\%) = 4,34$$

6. Kandungan 65 *Mesh* 15%

$$AC (\%) = \frac{10,5934 \text{ gr} - 10,5499 \text{ gr}}{11,5502 \text{ gr} - 10,5499 \text{ gr}} \times 100$$

$$AC (\%) = 4,34$$

7. Kandungan Abu 80 *Mesh* 5%

$$AC (\%) = \frac{11,1856 \text{ gr} - 11,1564 \text{ gr}}{12,1570 \text{ gr} - 11,1564 \text{ gr}} \times 100$$

$$AC (\%) = 2,91$$

8. Kandungan Abu 80 *Mesh* 10%

$$AC (\%) = \frac{11,3306 \text{ gr} - 11,2905 \text{ gr}}{11,1802 \text{ gr} - 11,2905 \text{ gr}} \times 100$$

$$AC (\%) = 4,009$$

9. Kandungan Abu 80 *Mesh* 15%

$$AC (\%) = \frac{10,2416 \text{ gr} - 10,1802 \text{ gr}}{11,1802 \text{ gr} - 10,1802 \text{ gr}} \times 100$$

$$AC (\%) = 6,14$$

## **LAMPIRAN B**

### **VARIABEL EKSPERIMEN**

## PERHITUNGAN VOLUME OLI BEKAS

| No | Kode Eksperimen | Volume Akuades (mL) | Berat Sampel (gr) | Ukuran Partikel (Mesh) | Proporsi Oli Bekas (%) |
|----|-----------------|---------------------|-------------------|------------------------|------------------------|
| 1  | HMJ-405         | 150                 | 15                | 40                     | 5                      |
| 2  | HMJ-4010        | 150                 | 15                | 40                     | 10                     |
| 3  | HMJ-4015        | 150                 | 15                | 40                     | 15                     |
| 4  | HMJ-655         | 150                 | 15                | 65                     | 5                      |
| 5  | HMJ-6510        | 150                 | 15                | 65                     | 10                     |
| 6  | HMJ-6515        | 150                 | 15                | 65                     | 15                     |
| 7  | HMJ-805         | 150                 | 15                | 80                     | 5                      |
| 8  | HMJ-8010        | 150                 | 15                | 80                     | 10                     |
| 9  | HMJ-8015        | 150                 | 15                | 80                     | 15                     |

- Rumus untuk menentukan volume oli bekas yang digunakan untuk aglomerasi

$$\text{Volume Oli Bekas (ml)} = \frac{\text{Volume Akuades}}{\text{Dosis Oli Bekas}} \times 100$$

1. Volume Oli Bekas HMJ-405, HMJ-655, dan HMJ-805

$$\text{Volume Oli Bekas (ml)} = \frac{150}{5} \times 100$$

$$\text{Volume Oli Bekas (ml)} = 7,5$$

2. Volume Oli Bekas HMJ-4010, HMJ-6510, dan HMJ-8010

$$\text{Volume Oli Bekas (ml)} = \frac{150}{10} \times 100$$

$$\text{Volume Oli Bekas (ml)} = 15$$

3. Volume Oli Bekas HMJ-4015, HMJ-6515, dan HMJ-8015

$$\text{Volume Oli Bekas (ml)} = \frac{150}{15} \times 100$$

$$\text{Volume Oli Bekas (ml)} = 22,5$$

**LAMPIRAN C**

**PERHITUNGAN HASIL BATUBARA,  
PERSENTASE PENGURANGAN ABU DAN  
TOTAL SULFUR**

## Perhitungan Hasil Batubara setelah Pencucian Kimia

- Rumus untuk Menentukan Hasil Batubara Setelah Aglomerasi

$$\text{Hasil Batubara (\%)} = \frac{W_2}{W_1} \times 100$$

Di mana:

W1 = Berat sampel batubara sebelum diaglomerasi

W2 = Berat sampel batubara setelah dialomerasi

- Aglomerasi Menggunakan Oli Bekas

- Data W1 (gr) dan W2 (gr) pada aglomerasi menggunakan oli bekas:

| Kode Eksperimen | Berat sampel batubara sebelum dicuci (gr) | Berat sampel batubara setelah dicuci (gr) |
|-----------------|---|---|
| 40 Mesh 5%      | 15  | 12,6989                                   |
| 40 Mesh 10%     | 15  | 14,3806                                   |
| 40 Mesh 15%     | 15  | 12,5072                                   |
| 65 Mesh 5%      | 15  | 11,9836                                   |
| 65 Mesh 10%     | 15  | 12,7847                                   |
| 65 Mesh 15%     | 15  | 12,5418                                   |
| 80 Mesh 5%      | 15  | 13,6939                                   |
| 80 Mesh 5%      | 15  | 12,3938                                   |
| 80 Mesh 15%     | 15  | 6,0381                                    |

- Perhitungan hasil batubara (%)

1. Hasil batubara 40 Mesh 5%

$$\text{Hasil Batubara (\%)} = \frac{12.6989}{15} \times 100$$

$$\text{Hasil Batubara (\%)} = 84,6493$$

2. Hasil batubara 40 Mesh 10%

$$\text{Hasil Batubara (\%)} = \frac{14.3806}{15} \times 100$$

$$\text{Hasil Batubara (\%)} = 95,8706$$

3. Hasil batubara 40 *Mesh* 15%

$$\text{Hasil Batubara (\%)} = \frac{12.5072}{15} \times 100$$

$$\text{Hasil Batubara (\%)} = 83,3813$$

4. Hasil batubara 65 *Mesh* 5%

$$\text{Hasil Batubara (\%)} = \frac{11.9836}{15} \times 100$$

$$\text{Hasil Batubara (\%)} = 79,8906$$

5. Hasil batubara 65 *Mesh* 10%

$$\text{Hasil Batubara (\%)} = \frac{12.7847}{15} \times 100$$

$$\text{Hasil Batubara (\%)} = 85,2313$$

6. Hasil batubara 65 *Mesh* 15%

$$\text{Hasil Batubara (\%)} = \frac{12.5418}{15} \times 100$$

$$\text{Hasil Batubara (\%)} = 83,612$$

7. Hasil batubara 80 *Mesh* 5%

$$\text{Hasil Batubara (\%)} = \frac{13.6939}{15} \times 100$$

$$\text{Hasil Batubara (\%)} = 91,2926$$

8. Hasil batubara 80 *Mesh* 10%

$$\text{Hasil Batubara (\%)} = \frac{12.3938}{15} \times 100$$

$$\text{Hasil Batubara (\%)} = 82,6253$$

9. Hasil batubara 80 *Mesh* 15%

$$\text{Hasil Batubara (\%)} = \frac{6.0381}{15} \times 100$$

$$\text{Hasil Batubara (\%)} = 40,254$$

## Perhitungan Persentase Pengurangan Abu setelah Aglomerasi

- Rumus untuk Menentukan Persentase Pengurangan Abu

$$\text{Persentase Pengurangan Abu (\%)} = \left[ \frac{X_1 - X_2}{X_1} \right] \times 100$$

Di mana:

X1 = % abu batubara sebelum diaglomerasi

X2 = % abu batubara setelah diaglomerasi

- Aglomerasi Menggunakan Oli Bekas

- Data X1 (%) dan X2 (%) pada aglomerasi menggunakan oli bekas:

| Kode Eksperimen | abu batubara sebelum dicuci (%) | abu batubara setelah dicuci (%) |
|-----------------|---------------------------------|---------------------------------|
| 40 Mesh 5%      | 8,79                            | 4,51                            |
| 40 Mesh 10%     | 8,79                            | 3,76                            |
| 40 Mesh 15%     | 8,79                            | 4,27                            |
| 65 Mesh 5%      | 8,79                            | 3,12                            |
| 65 Mesh 10%     | 8,79                            | 4,34                            |
| 65 Mesh 15%     | 8,79                            | 4,34                            |
| 80 Mesh 5%      | 8,79                            | 2,91                            |
| 80 Mesh 5%      | 8,79                            | 4,009                           |
| 80 Mesh 15%     | 8,79                            | 6,14                            |

- Perhitungan persentase reduksi abu (%)

1. Persentase reduksi abu 40 Mesh 5%

$$\text{Persentase Pengurangan Abu (\%)} = \left[ \frac{8,79 - 4,51}{8,79} \right] \times 100$$

$$\text{Persentase Pengurangan Abu (\%)} = 48,69$$

2. Persentase reduksi abu 40 Mesh 10%



$$\text{Persentase Pengurangan Abu (\%)} = \left[ \frac{8,79 - 3,76}{8,79} \right] \times 100$$

$$\text{Persentase Pengurangan Abu (\%)} = 57,22$$

3. Persentase reduksi abu 40 *Mesh* 15%

$$\text{Persentase Pengurangan Abu (\%)} = \left[ \frac{8,79 - 4,27}{8,79} \right] \times 100$$

$$\text{Persentase Pengurangan Abu (\%)} = 51,42$$

4. Persentase pengurangan abu 65 *Mesh* 5%

$$\text{Persentase Pengurangan Abu (\%)} = \left[ \frac{8,79 - 3,12}{8,79} \right] \times 100$$

$$\text{Persentase Pengurangan Abu (\%)} = 64,50$$

5. Persentase pengurangan abu 65 *Mesh* 10%

$$\text{Persentase Pengurangan Abu (\%)} = \left[ \frac{8,79 - 4,34}{8,79} \right] \times 100$$

$$\text{Persentase Pengurangan Abu (\%)} = 50,62$$

6. Persentase pengurangan abu 65 *Mesh* 15%

$$\text{Persentase Pengurangan Abu (\%)} = \left[ \frac{8,79 - 4,34}{8,79} \right] \times 100$$

$$\text{Persentase Pengurangan Abu (\%)} = 50,62$$

7. Persentase pengurangan abu 80 *Mesh* 5%

$$\text{Persentase Pengurangan Abu (\%)} = \left[ \frac{8,79 - 2,91}{8,79} \right] \times 100$$

$$\text{Persentase Pengurangan Abu (\%)} = 66,89$$

8. Persentase pengurangan abu 80 *Mesh* 10%

$$\text{Persentase Pengurangan Abu (\%)} = \left[ \frac{8,79 - 4,009}{8,79} \right] \times 100$$

$$\text{Persentase Pengurangan Abu (\%)} = 54,39$$

9. Persentase pengurangan abu 80 *Mesh* 15%

$$\text{Persentase Pengurangan Abu (\%)} = \left[ \frac{8,79 - 6,14}{8,79} \right] \times 100$$

$$\text{Persentase Pengurangan Abu (\%)} = 30,14$$

## Perhitungan Persentase Pengurangan Total Sulfur setelah Aglomerasi

- Rumus untuk Menentukan Persentase Pengurangan Total Sulfur

$$\text{Persentase Pengurangan Sulfur Total (\%)} = \left[ \frac{Y_1 - Y_2}{Y_1} \right] \times 100$$

Di mana:

Y1 = % total sulfur batubara sebelum diaglomerasi

Y2 = % total sulfur batubara setelah diaglomerasi

- Aglomerasi Menggunakan Oli Bekas

- Data Y1 (%) dan Y2 (%) pada aglomerasi menggunakan oli bekas:

| Kode Eksperimen | total sulfur batubara sebelum diaglomerasi (%) | total sulfur batubara setelah diaglomerasi (%) |
|-----------------|--|--|
| 40 Mesh 5%      | 2,87   | 1,92   |
| 40 Mesh 10%     | 2,87   | 1,91   |
| 40 Mesh 15%     | 2,87   | 1,66   |
| 65 Mesh 5%      | 2,87   | 1,77   |
| 65 Mesh 10%     | 2,87   | 1,63   |
| 65 Mesh 15%     | 2,87   | 1,74   |
| 80 Mesh 5%      | 2,87   | 1,81   |
| 80 Mesh 5%      | 2,87   | 1,80   |
| 80 Mesh 15%     | 2,87   | 1,88   |

- Perhitungan persentase pengurangan total sulfur (%)

1. Persentase Pengurangan Total Sulfur 40 Mesh 5%

$$\text{Persentase Pengurangan Total Sulfur (\%)} = \left[ \frac{2,87 - 1,92}{2,87} \right] \times 100$$

$$\text{Persentase Pengurangan Total Sulfur (\%)} = 33,56$$

2. Persentase Pengurangan Total Sulfur 40 Mesh 10%

$$\text{Persentase Pengurangan Total Sulfur (\%)} = \left[ \frac{2,87 - 1,91}{2,87} \right] \times 100$$

Persentase Pengurangan Total Sulfur (%) = 33,91

3. Persentase Pengurangan Total Sulfur 40 *Mesh* 15%

$$\text{Persentase Pengurangan Total Sulfur (\%)} = \left[ \frac{2,87 - 1,66}{2,87} \right] \times 100$$

Persentase Pengurangan Total Sulfur (%) = 42,56

4. Persentase Pengurangan Total Sulfur 65 *Mesh* 5%

$$\text{Persentase Pengurangan Total Sulfur (\%)} = \left[ \frac{2,87 - 1,77}{2,87} \right] \times 100$$

Persentase Pengurangan Total Sulfur (%) = 38,75

5. Persentase Pengurangan Total Sulfur 65 *Mesh* 10%

$$\text{Persentase Pengurangan Total Sulfur (\%)} = \left[ \frac{2,87 - 1,63}{2,87} \right] \times 100$$

Persentase Pengurangan Total Sulfur (%) = 43,60

6. Persentase Pengurangan Total Sulfur 65 *Mesh* 15%

$$\text{Persentase Pengurangan Total Sulfur (\%)} = \left[ \frac{2,87 - 1,74}{2,87} \right] \times 100$$

Persentase Pengurangan Total Sulfur (%) = 39,79

7. Persentase Pengurangan Total Sulfur 80 *Mesh* 5%

$$\text{Persentase Pengurangan Total Sulfur (\%)} = \left[ \frac{2,87 - 1,81}{2,87} \right] \times 100$$

Persentase Pengurangan Total Sulfur (%) = 37,37

8. Persentase Pengurangan Total Sulfur 80 *Mesh* 10%

$$\text{Persentase Pengurangan Total Sulfur (\%)} = \left[ \frac{2,87 - 1,8}{2,87} \right] \times 100$$

Persentase Pengurangan Total Sulfur (%) = 37,72

9. Persentase Pengurangan Total Sulfur 80 *Mesh* 15%

$$\text{Persentase Pengurangan Total Sulfur (\%)} = \left[ \frac{2,87 - 1,88}{2,87} \right] \times 100$$

Persentase Pengurangan Total Sulfur (%) = 34,95

## **LAMPIRAN D**

### **HASIL ANALISIS TOTAL SULFUR**



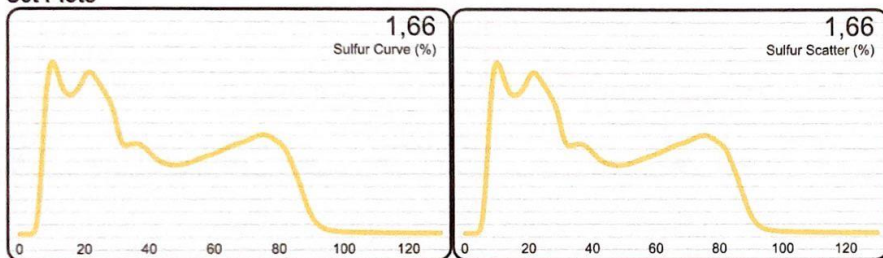
### Overview

- Name: 40 M 15
- Sulfur Std. Dev.: 0 %
- Method: BB\_ADB
- Sulfur %RSD: 0
- Sulfur Average: 1,66 %
- Number of Included Replicates: 1
- Description:

### Replicates

| Sample Mass | Comments | Sulfur | Analysis Date       |
|-------------|----------|--------|---------------------|
| 0,2005 g    |          | 1,66 % | 06/10/2022 09:50:03 |

### Set Plots



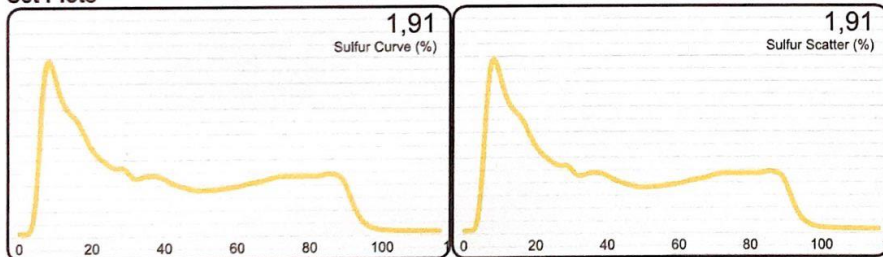
### Overview

- Name: 40 M 10
- Sulfur Std. Dev.: 0 %
- Method: BB\_ADB
- Sulfur %RSD: 0
- Sulfur Average: 1,91 %
- Number of Included Replicates: 1
- Description:

### Replicates

| Sample Mass | Comments | Sulfur | Analysis Date       |
|-------------|----------|--------|---------------------|
| 0,2004 g    |          | 1,91 % | 06/10/2022 09:57:57 |

### Set Plots



### Overview

- Name: 40 M 5
- Sulfur Std. Dev.: 0 %
- Method: BB\_ADB
- Sulfur %RSD: 0
- Sulfur Average: 1,92 %
- Number of Included Replicates: 1
- Description:

**Replicates**

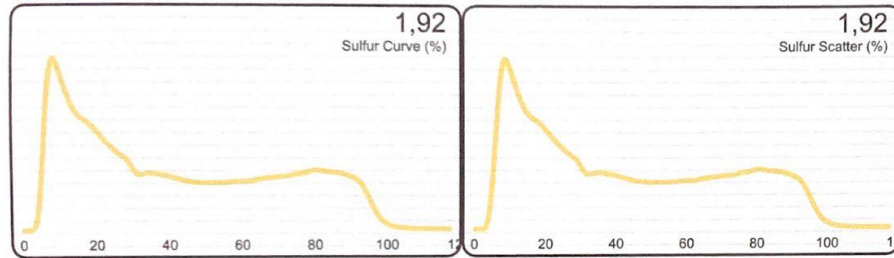
● Sample Mass  
0,2007 g

Comments

Sulfur  
1,92 %

Analysis Date  
06/10/2022 10:00:32

**Set Plots**





### Overview

- Name: 65 M 15
- Sulfur Std. Dev.: 0 %

- Method: BB\_ADB
- Sulfur %RSD: 0

Sulfur Average: 1,74 %

Number of Included Replicates: 1 • Description:

### Replicates

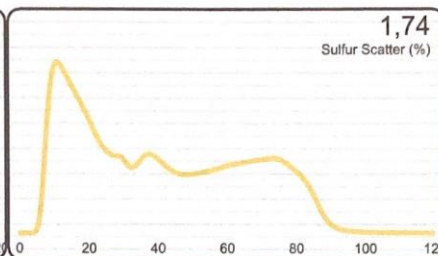
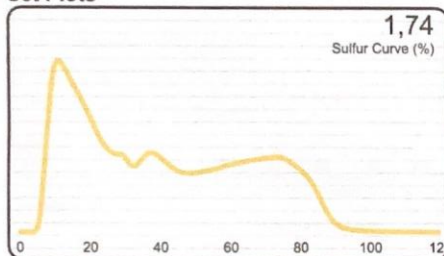
Sample Mass  
0,2003 g

Comments

Sulfur  
1,74 %

Analysis Date  
06/10/2022 09:38:51

### Set Plots



### Overview

- Name: 65 M 10
- Sulfur Std. Dev.: 0 %

- Method: BB\_ADB
- Sulfur %RSD: 0

Sulfur Average: 1,63 %

Number of Included Replicates: 1 • Description:

### Replicates

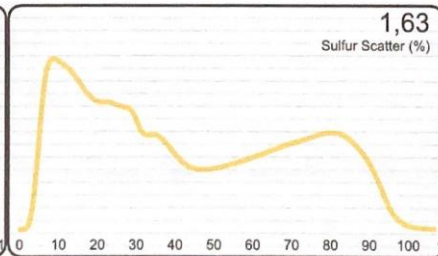
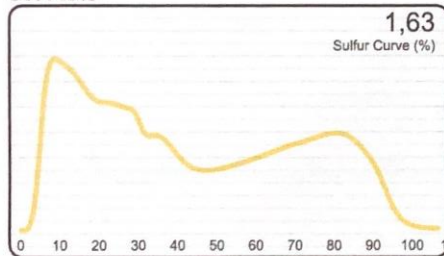
Sample Mass  
0,2006 g

Comments

Sulfur  
1,63 %

Analysis Date  
06/10/2022 09:41:28

### Set Plots



### Overview

- Name: 65 M 5
- Sulfur Std. Dev.: 0 %

- Method: BB\_ADB
- Sulfur %RSD: 0

Sulfur Average: 1,77 %

Number of Included Replicates: 1 • Description:

### Replicates

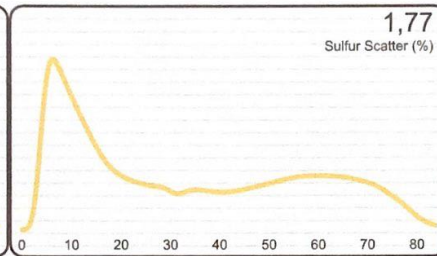
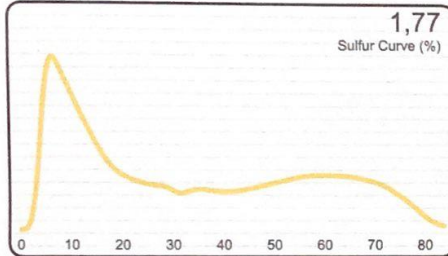
Sample Mass  
0,2005 g

Comments

Sulfur  
1,77 %

Analysis Date  
06/10/2022 09:44:53

### Set Plots



### Overview

• Name: 65 M Z  
• Sulfur Std. Dev.: 0 %

• Method: BB\_ADB  
• Sulfur %RSD: 0

• Sulfur Average: 2,89 %

• Number of Included Replicates: 1 • Description:

### Replicates

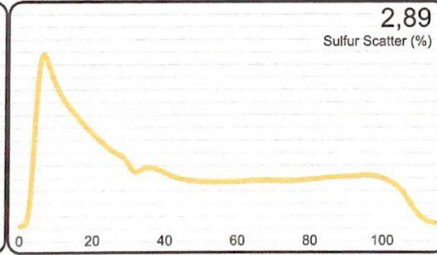
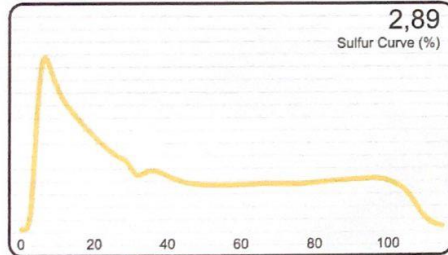
Sample Mass  
0,2004 g

Comments

Sulfur  
2,89 %

Analysis Date  
06/10/2022 09:47:08

### Set Plots







### Overview

- Name: 80 M 15
- Sulfur Std. Dev.: 0 %

- Method: BB\_ADB
- Sulfur %RSD: 0

Sulfur Average: 1,88 %

Number of Included Replicates: 1 • Description:

### Replicates

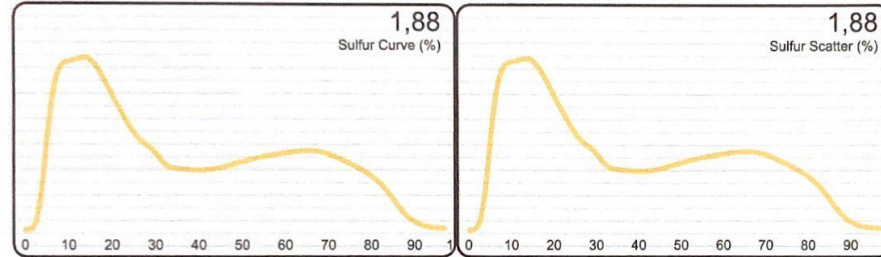
Sample Mass  
0,2008 g

Comments

Sulfur  
1,88 %

Analysis Date  
06/10/2022 09:30:40

### Set Plots



### Overview

- Name: 80 M 10
- Sulfur Std. Dev.: 0 %

- Method: BB\_ADB
- Sulfur %RSD: 0

Sulfur Average: 1,80 %

Number of Included Replicates: 1 • Description:

### Replicates

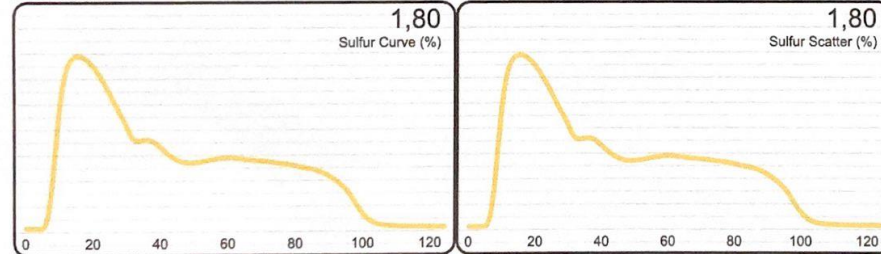
Sample Mass  
0,2006 g

Comments

Sulfur  
1,80 %

Analysis Date  
06/10/2022 09:32:47

### Set Plots



### Overview

- Name: 80 M 5
- Sulfur Std. Dev.: 0 %

- Method: BB\_ADB
- Sulfur %RSD: 0

Sulfur Average: 1,81 %

Number of Included Replicates: 1 • Description:

**Replicates**

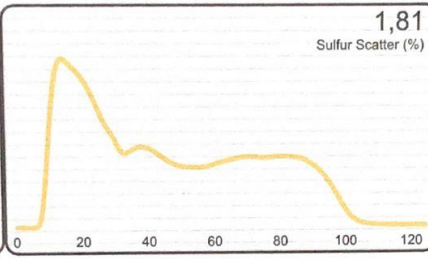
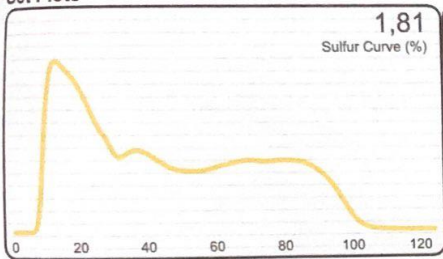
Sample Mass  
0.2005 g

Comments

Sulfur  
1,81 %

Analysis Date  
06/10/2022 09:35:56

**Set Plots**



## **LAMPIRAN E**

### **KARTU KONSULTASI TUGAS AKHIR**

**Lampiran B 10**  
**Kartu Konsultasi Tugas Akhir**

**JUDUL:** Studi Penurunan Kadar Abu dan Sulfur Batubara dengan Metode Aglomerasi Minyak Menggunakan Oli Bekas

(Konsultasi minimal 8 kali)

| TANGGAL    | MATERI KONSULTASI  | PARAF DOSEN |
|------------|--|-------------|
| 10/11/2022 | - Perbaiki Abstrak<br>- Perbaiki Tujuan                    | <i>A</i>    |
| 14/11/2022 | - Perbaiki Latar Belakang<br>- Asistensi Metode Penelitian | <i>A</i>    |
| 18/11/2022 | - Asistensi BAB IV<br>- Asistensi BAB V                    | <i>A</i>    |
| 28/11/2022 | - Asistensi BAB IV<br>- Asistensi Abstrak                  | <i>A</i>    |
| 21/12/2022 | - Perbaiki Penulisan                                       | <i>A</i>    |
| 31/1/2022  | - Asistensi Artikel<br>- Asistensi Poster                  | <i>A</i>    |
| 13/1/2022  | - ACC Pembimbing 1   | <i>A</i>    |

| TANGGAL    | MATERI KONSULTASI                           | PARAF DOSEN |
|------------|---|-------------|
| 11/11/2022 | - Perbaikan Tujuan<br>- Asistensi Abstrak   | <i>W</i>    |
| 25/11/2022 | - Perbaikan Penulisan<br>- Asistensi BAB IV | <i>W</i>    |
| 12/12/2022 | - Perbaikan Format                          | <i>W</i>    |
| 16/1/2023  | - Perbaikan Daftar Pustaka<br>- ACC         | <i>W</i>    |

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