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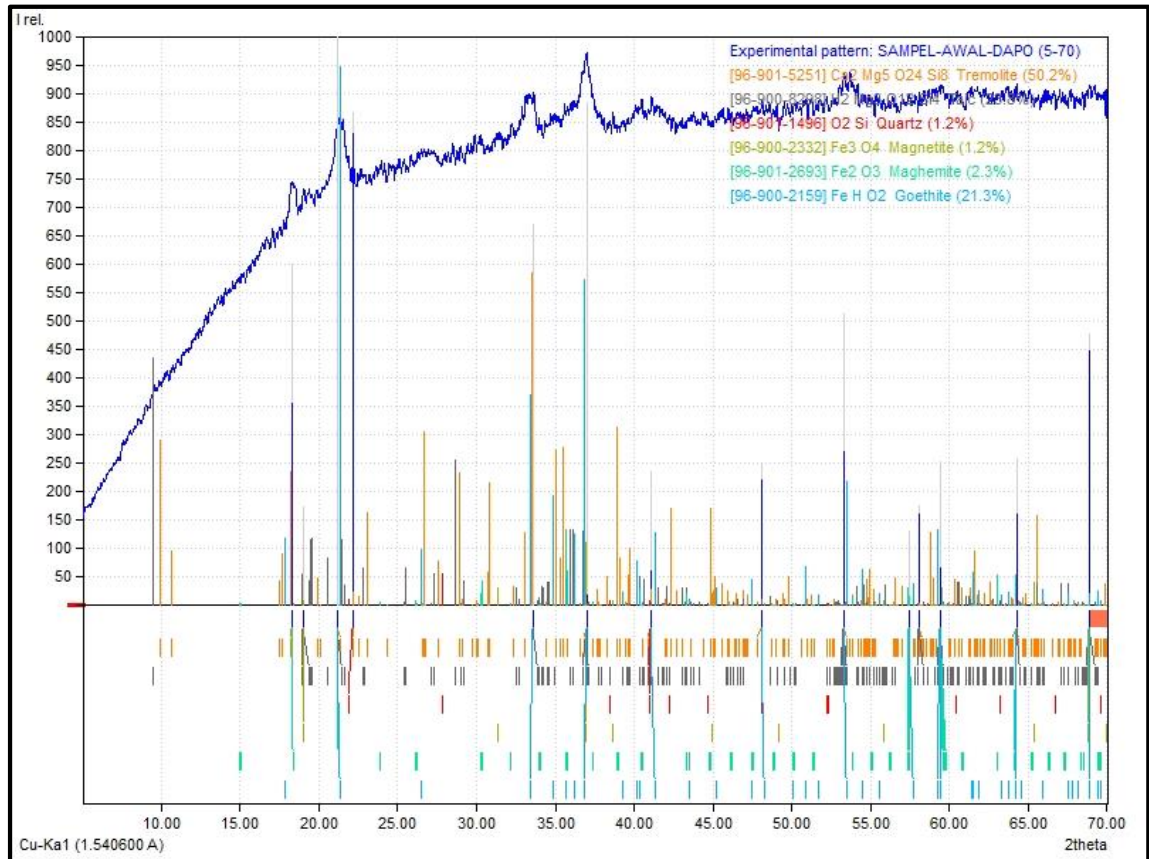
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LAMPIRAN

Lampiran A

Hasil XRD

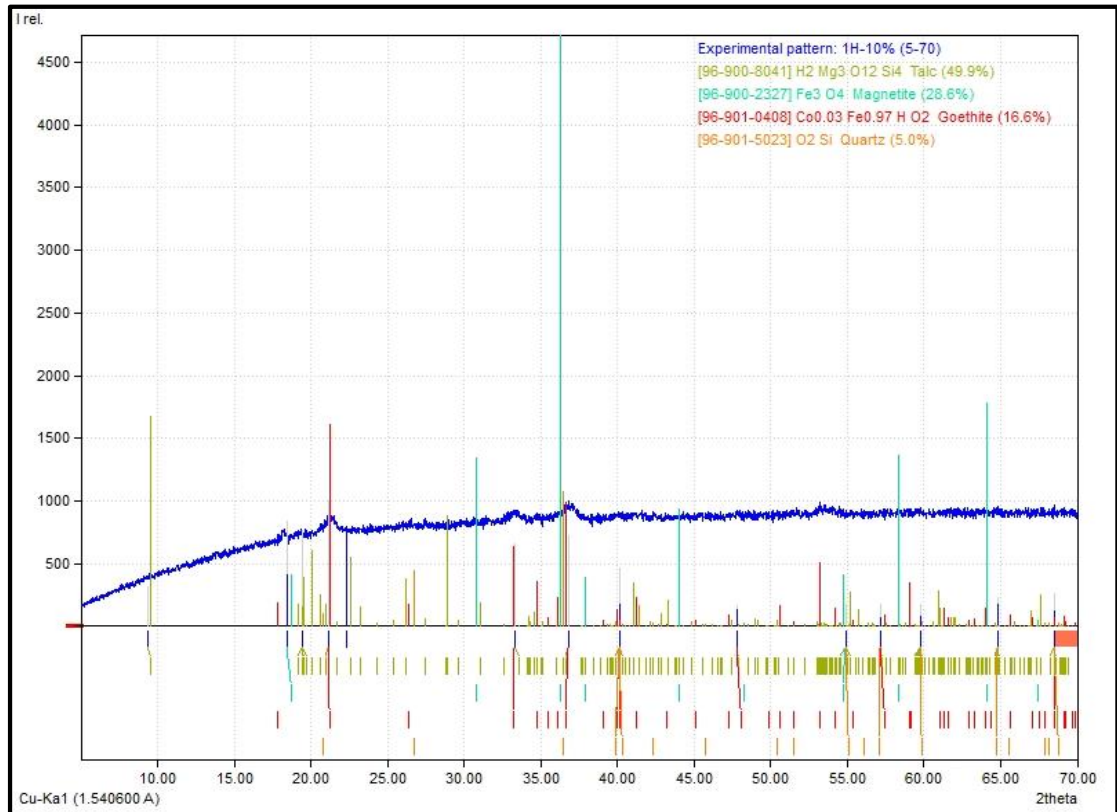
1. Sampel Awal



No	2theta [°]	d [Å]	I/I0	FWHM	Matched
1	9,40	9,4010	186,19	0,6755	A
2	18,26	4,8546	601,27	0,4476	
3	19,04	4,6574	173,86	0,8451	A,C
4	21,20	4,1875	1000,00	0,8357	A,D
5	22,16	4,0082	869,22	0,7564	B
6	33,64	2,6620	670,52	0,6978	A,D
7	36,98	2,4289	887,21	0,6327	A,C,D
8	41,12	2,1934	236,23	0,5903	A,B,D
9	48,12	1,8894	249,49	0,6574	A,B,D
10	53,34	1,7162	513,03	0,6459	A,D
11	57,46	1,6025	131,55	0,1528	A,B,D
12	59,48	1,5528	253,71	0,6143	A,C,D
13	64,28	1,4480	259,73	0,0925	A,D
14	68,92	1,3614	479,89	0,7354	A,C,D

Index	Amount (%)	Name	Formula sum
A	2,9	Talc	H2 Mg3 O12 Si4
B	65,0	Quartz	O2 Si
C	1,0	Magnetite	Fe3 O4
D	31,1	Goethite	Fe H O2

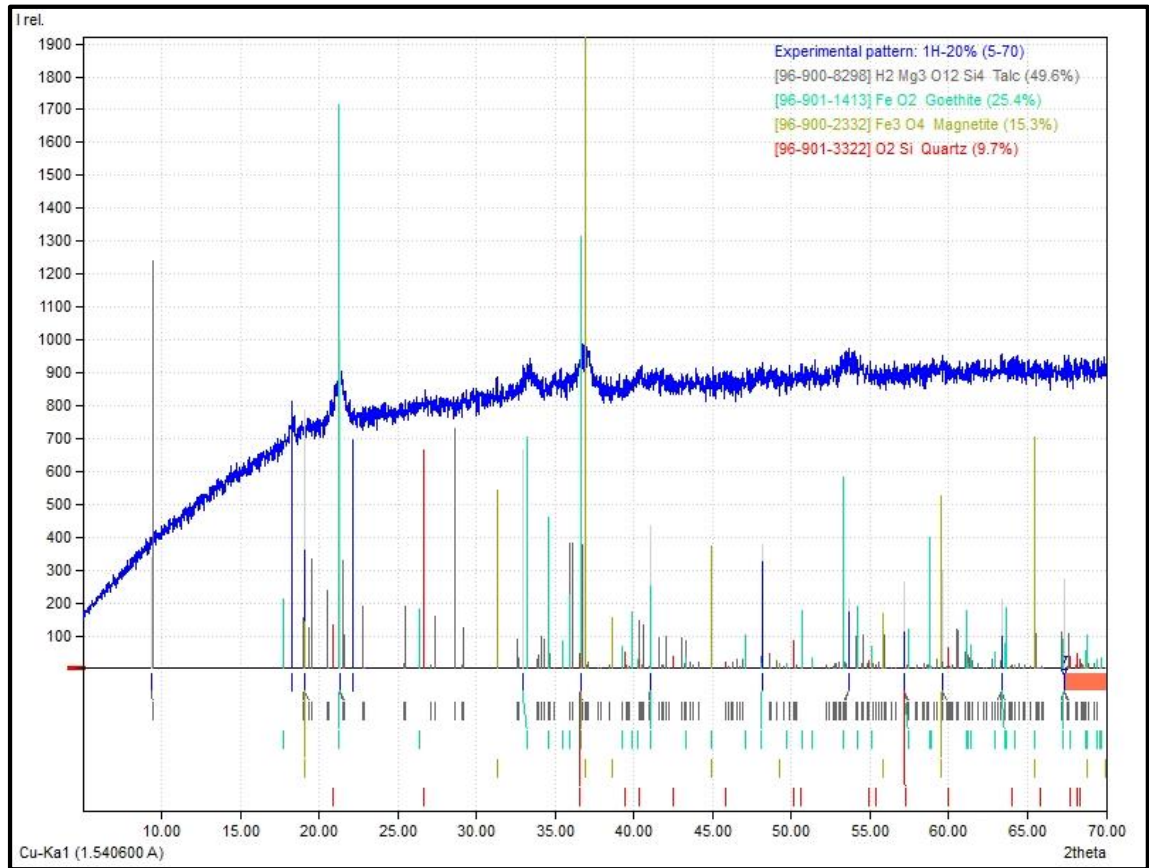
2. Sampel Residu 1 Hari 10%



No	2theta [°]	d [Å]	I/I ₀	FWHM	Matched
1	9,40	9,4010	314,40	13,4800	A
2	18,44	4,8076	834,55	13,4800	B
3	19,42	4,5671	769,49	13,4800	A
4	21,20	4,1875	1000,00	13,4800	A,C
5	22,30	3,9834	751,15	13,4800	
6	33,34	2,6853	658,88	13,4800	A,C
7	36,82	2,4391	727,06	13,4800	A,C
8	40,12	2,2457	462,28	13,4800	A,C,D
9	47,78	1,9021	167,59	21,4219	A,C
10	54,88	1,6716	174,10	20,6210	A,B,D
11	57,20	1,6092	175,26	20,4846	A,C,D
12	59,74	1,5467	176,06	20,3921	A,D
13	64,82	1,4372	226,23	13,4800	A,D
14	68,52	1,3683	259,46	13,4800	A,B,C,D

Index	Amount (%)	Name	Formula sum
A	49,9	Talc	H ₂ Mg ₃ O ₁₂ Si ₄
B	28,6	Magnetite	Fe ₃ O ₄
C	13,4	Goethite	Co _{0,03} Fe _{0,97} H O ₂
D	2,3	Quartz	O ₂ Si

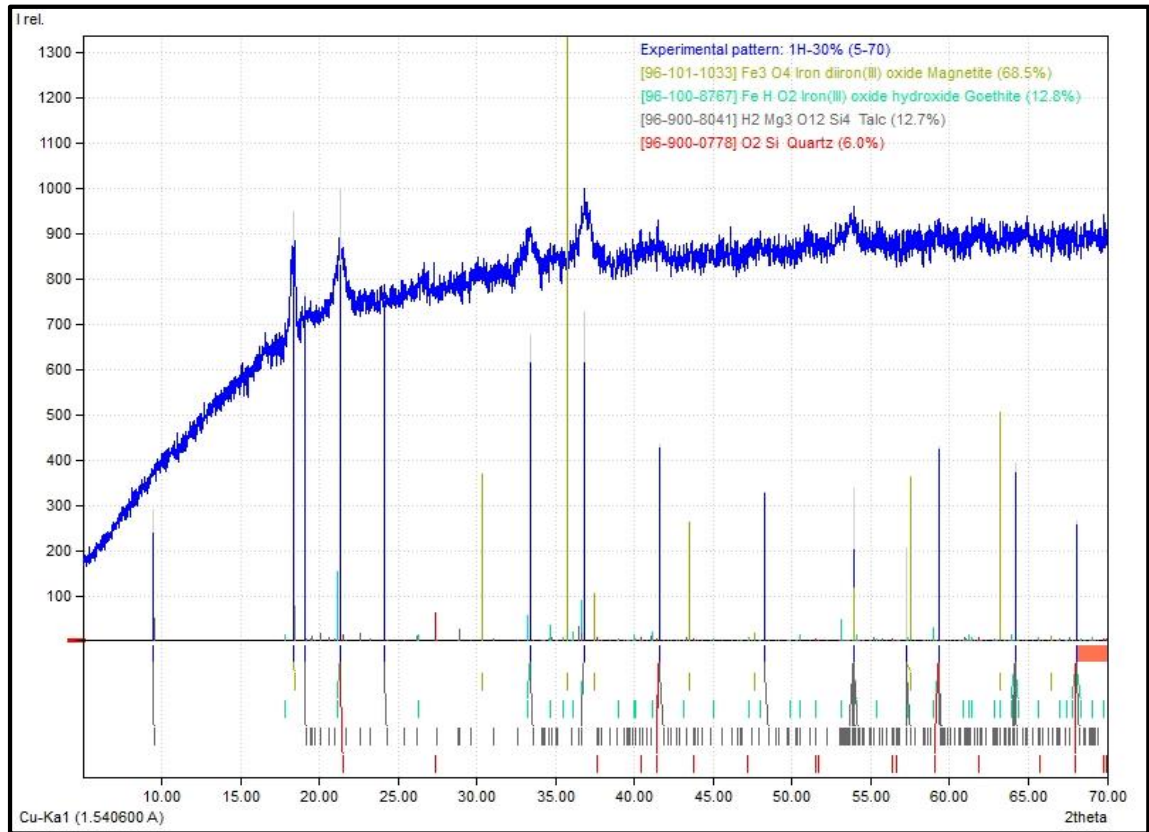
3. Sampel Residu 1 Hari 20%



No	2theta [°]	d [Å]	I/I0	FWHM	Matched
1	9,38	9,4210	338,80	12,7600	A
2	18,32	4,8388	813,60	12,7600	
3	19,10	4,6429	785,92	12,7600	A,C
4	21,34	4,1604	1000,00	12,7600	A,B
5	22,16	4,0082	696,82	12,7600	
6	32,98	2,7138	666,24	12,7600	B
7	36,62	2,4519	749,76	12,7600	A,B,D
8	41,10	2,1944	434,11	12,7600	A,B
9	48,18	1,8872	378,43	12,7600	A,B
10	53,68	1,7061	210,10	19,6399	A
11	57,18	1,6097	263,44	15,6635	A,B,D
12	59,62	1,5495	298,38	12,7600	A,C
13	63,34	1,4672	212,33	19,4341	A,B
14	67,32	1,3898	271,12	12,7600	A,B

Index	Amount (%)	Name	Formula sum
A	49,6	Talc	H2 Mg3 O12 Si4
B	25,4	Goethite	Fe O2
C	15,3	Magnetite	Fe3 O4
D	9,7	Quartz	O2 Si

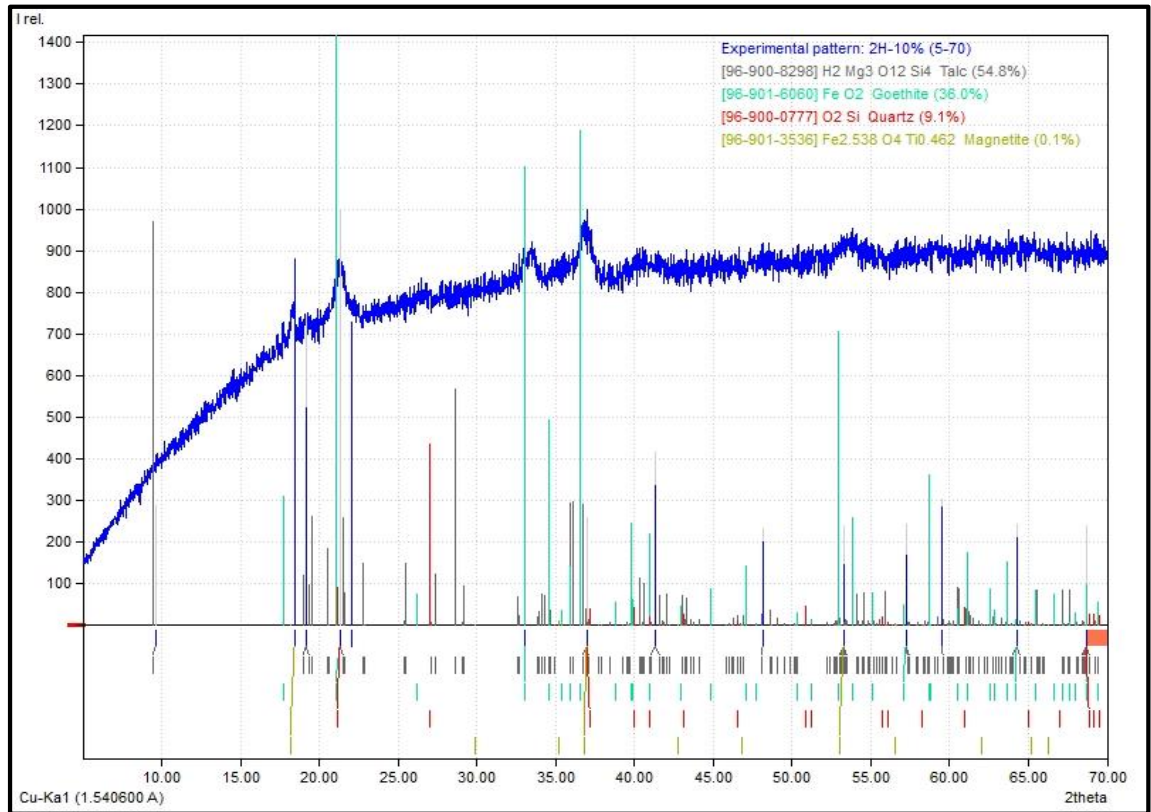
4. Sampel Residu 1 Hari 30%



No	2theta [°]	d [Å]	I/I ₀	FWHM	Matched
1	9,46	9,3415	289,13	0,8800	C
2	18,36	4,8284	949,67	2,2457	A
3	19,08	4,6477	769,58	0,8800	C
4	21,38	4,1527	1000,00	2,4429	B,D
5	24,16	3,6808	754,36	0,8800	C
6	33,42	2,6790	674,49	3,0101	B,C
7	36,80	2,4404	727,27	2,2880	B,C
8	41,58	2,1702	436,52	4,0564	C,D
9	48,28	1,8835	330,41	0,8800	C
10	53,90	1,6996	337,76	2,9984	A,B,C
11	57,30	1,6066	203,71	2,000	A,B,C
12	59,30	1,5571	428,95	1,3517	B,C,D
13	64,20	1,4496	393,33	1,3775	B,C
14	68,08	1,3761	266,17	0,5600	B,C,D

Index	Amount (%)	Name	Formula sum
A	68,5	Magnetite	Fe ₃ O ₄
B	12,8	Goethite	Fe H O ₂
A	12,7	Talc	H ₂ Mg ₃ O ₁₂ Si ₄
D	6,0	Quartz	O ₂ Si

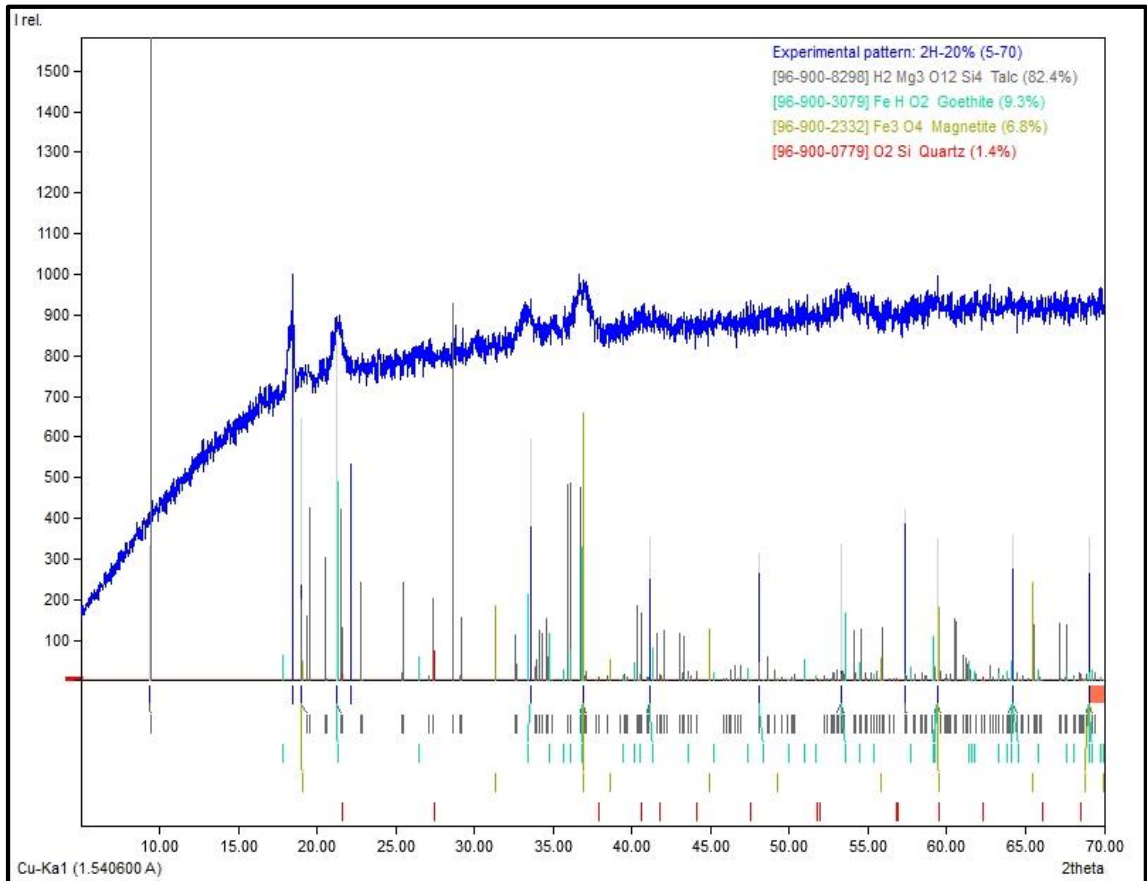
5. Sampel Residu 2 Hari 10%



No	2theta [°]	d [Å]	I/I ₀	FWHM	Matched
1	9,60	9,2055	287,45	12,9200	A
2	18,44	4,8076	882,53	12,9200	D
3	19,16	4,6285	744,12	12,9200	A
4	21,32	4,1642	1000,00	12,9200	A,B,C
5	22,06	4,0262	727,51	12,9200	
6	33,00	2,7122	658,38	12,9200	B
7	37,00	2,4276	259,66	18,4302	A,C,D
8	41,36	2,1812	417,07	12,9200	A
9	48,14	1,8887	233,19	20,5224	A
10	53,26	1,7185	240,11	19,9314	A,D
11	57,22	1,6087	243,77	19,6315	A,B
12	59,54	1,5514	304,46	15,7186	A
13	64,24	1,4488	242,50	19,7343	A,B
14	68,72	1,3648	238,92	20,0303	A,B,C

Index	Amount (%)	Name	Formula sum
A	54,8	Talc	H ₂ Mg ₃ O ₁₂ Si ₄
B	36,0	Goethite	Fe O ₂
D	9,1	Quartz	O ₂ Si
E	0,1	Magnetite	Fe _{2,538} O ₄ Ti _{0,462}

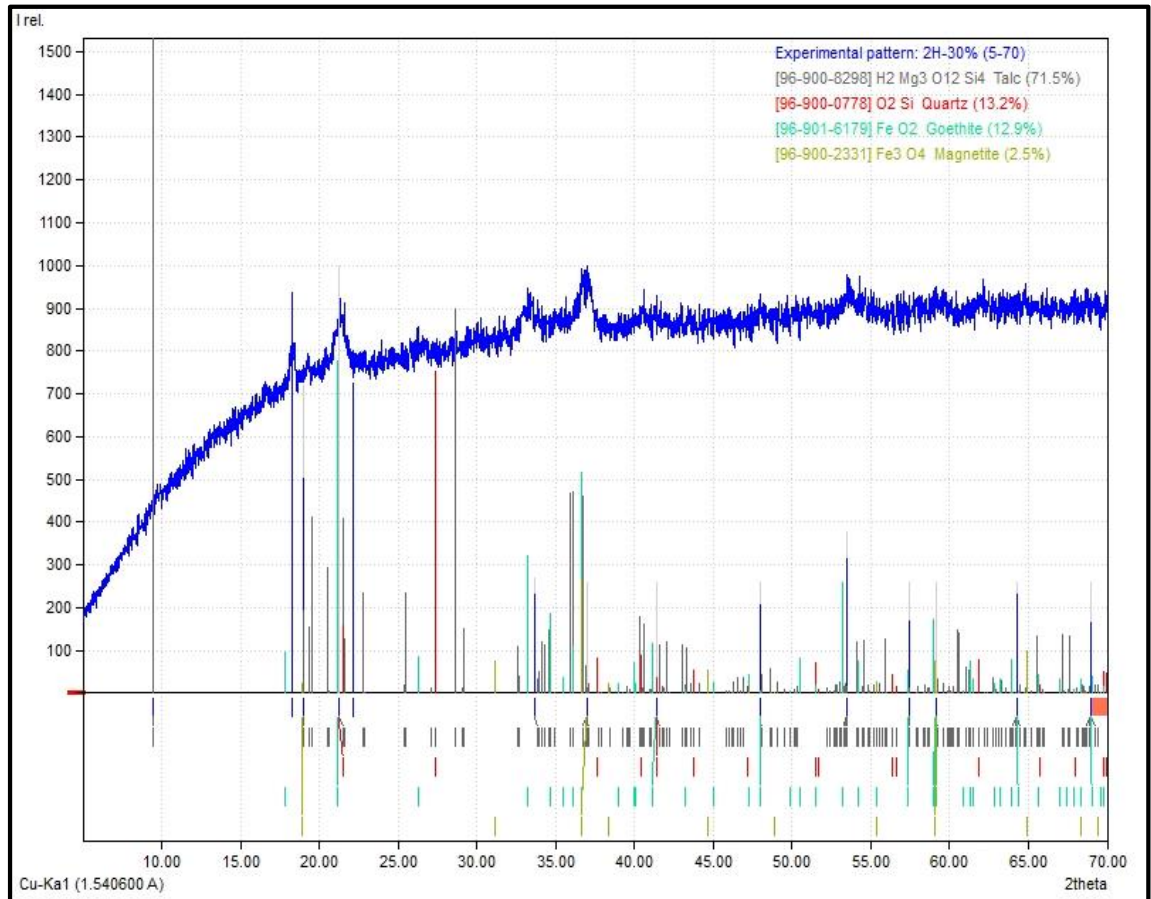
6. Sampel Residu 2 Hari 20%



No	2theta [°]	d [Å]	I/I ₀	FWHM	Matched
1	9,34	9,4612	331,07	5,8400	A
2	18,46	4,8024	1000,00	5,8400	
3	19,04	4,6574	644,61	5,8400	A,C
4	21,22	4,1836	835,38	5,8400	A,B
5	22,16	4,0082	534,21	5,8400	
6	33,56	2,6682	595,67	5,8400	B
7	36,92	2,4327	612,94	5,8400	A,B,C
8	41,12	2,1934	352,17	5,8400	A,B
9	48,06	1,8916	315,52	5,8400	A,B
10	53,28	1,7180	336,69	1,4000	A,B
11	57,36	1,6051	423,66	7,5335	A
12	59,40	1,5547	351,72	9,0743	A,B,C
13	64,22	1,4492	355,60	8,7679	A,B
14	69,02	1,3596	354,17	9,0114	A,B,C

Index	Amount (%)	Name	Formula sum
A	82,4	Talc	H ₂ Mg ₃ O ₁₂ Si ₄
B	9,3	Goethite	Fe H O ₂
C	6,8	Magnetite	Fe ₃ O ₄
D	1,4	Quartz	O ₂ Si

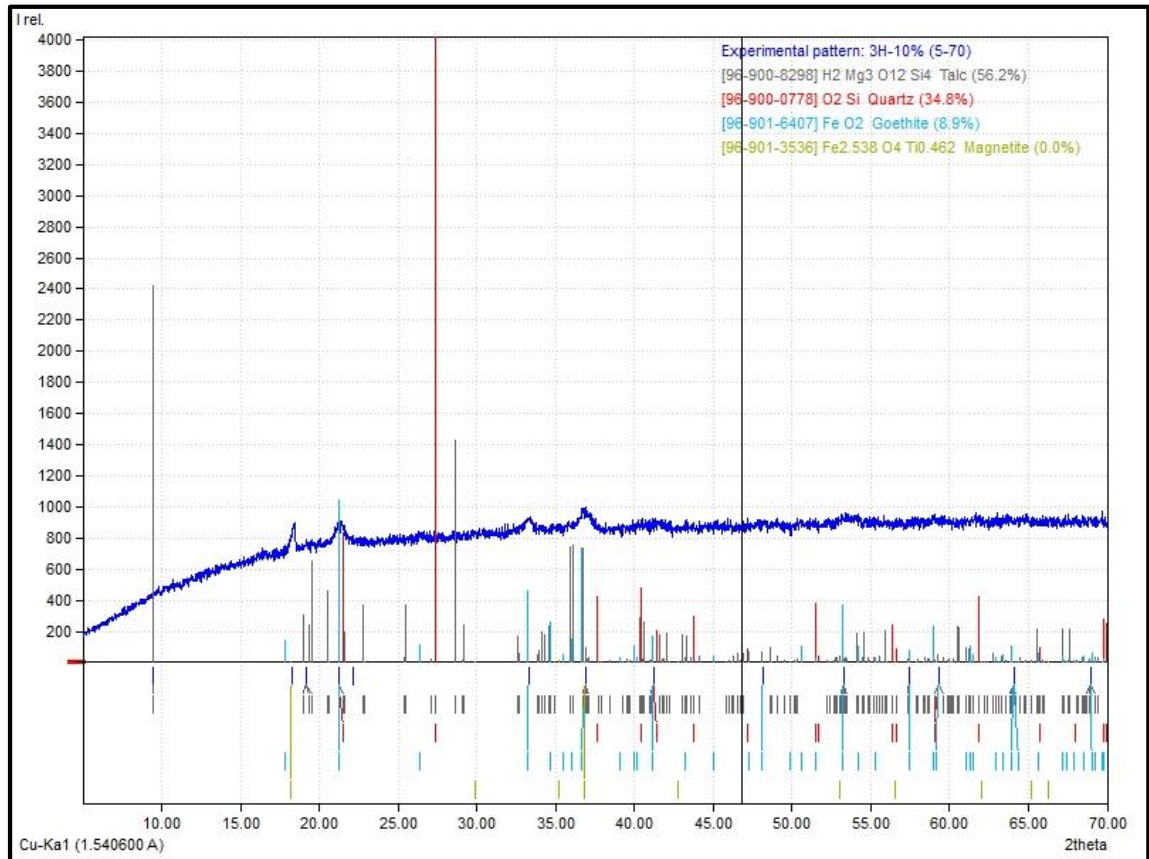
7. Sampel Residu 2 Hari 30%



No	2theta [°]	d [Å]	I/I0	FWHM	Matched
1	9,42	9,3810	259,62	54,1200	A
2	18,26	4,8546	937,29	18,0400	
3	19,00	4,6671	721,39	18,0400	A,D
4	21,24	4,1797	1000,00	18,0400	A,B,C
5	22,14	4,0118	725,80	18,0400	
6	33,66	2,6605	268,76	52,2792	A
7	36,98	2,4289	259,62	54,1200	A,D
8	41,44	2,1772	259,62	54,1200	A,B,C
9	48,00	1,8939	259,62	54,1200	A,C
10	53,50	1,7114	375,42	18,0400	A
11	57,48	1,6020	259,62	54,1200	A,C
12	59,12	1,5614	259,62	54,1200	A,B,C,D
13	64,26	1,4484	259,62	54,1200	A,C
14	68,94	1,3610	259,62	54,1200	A,C

Index	Amount (%)	Name	Formula sum
A	71,5	Talc	H2 Mg3 O12 Si4
B	13,2	Quartz	O2 Si
C	12,9	Goethite	Fe O2
D	2,5	Magnetite	Fe3 O4

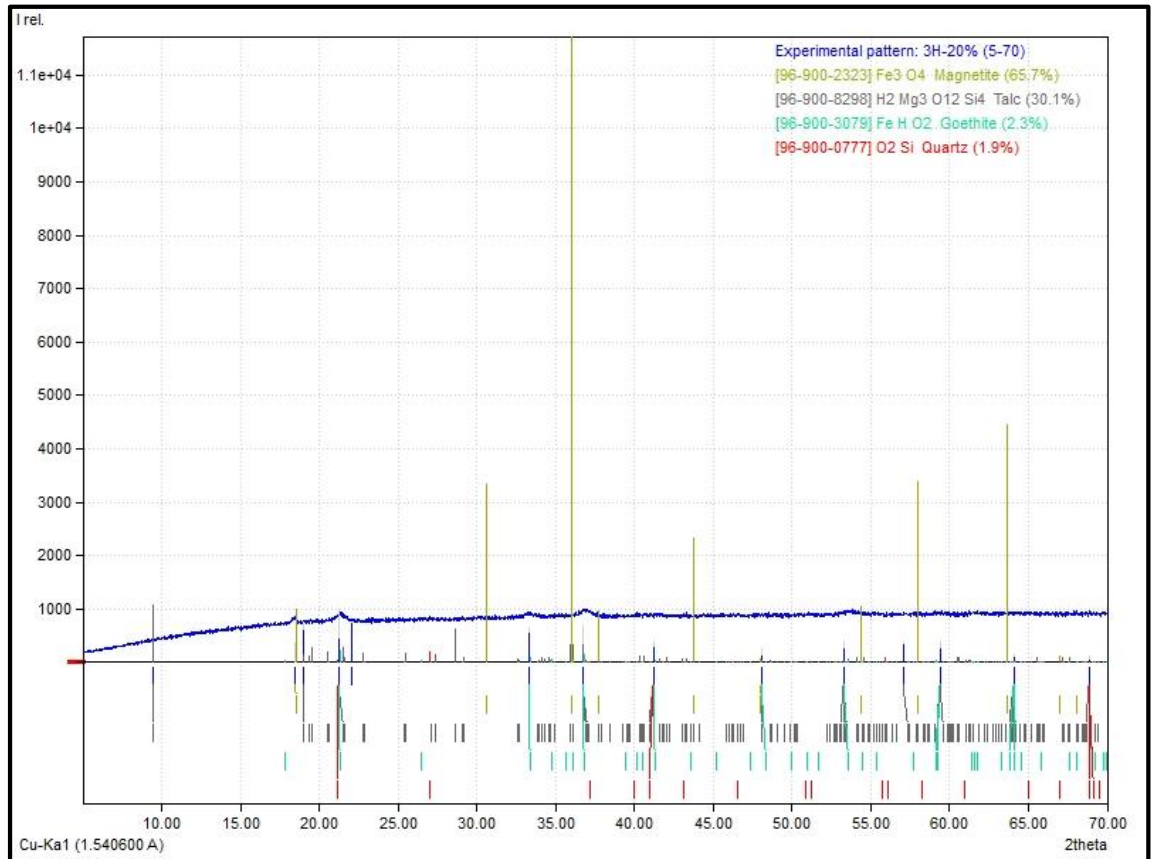
8. Sampel Residu 3 Hari 10%



No	2theta [°]	d [Å]	I/IO	FWHM	Matched
1	9,44	9,3612	nan	6,8400	A
2	18,26	4,8546	nan	6,8400	D
3	19,22	4,6142	nan	6,8400	A
4	21,22	4,1836	nan	6,8400	A,B,C
5	22,16	4,0082	nan	6,8400	
6	33,30	2,6884	nan	6,8400	C
7	36,88	2,4353	nan	6,8400	A,C,D
8	41,24	2,1873	nan	6,8400	A,B,C
9	48,14	1,8887	nan	10,7930	A,C
10	53,34	1,7162	nan	6,8400	A,C
11	57,46	1,6025	nan	10,7172	A,C
12	59,30	1,5571	nan	10,5832	A,B,C
13	64,10	1,4516	nan	10,1810	A,C
14	68,92	1,3614	nan	10,5295	A,C

Index	Amount (%)	Name	Formula sum
A	56,2	Talc	H2 Mg3 O12 Si4
B	34,8	Quartz	O2 Si
C	8,9	Goethite	Fe O2
D	0,0	Magnetite	Fe2,538 O4 Ti0,462

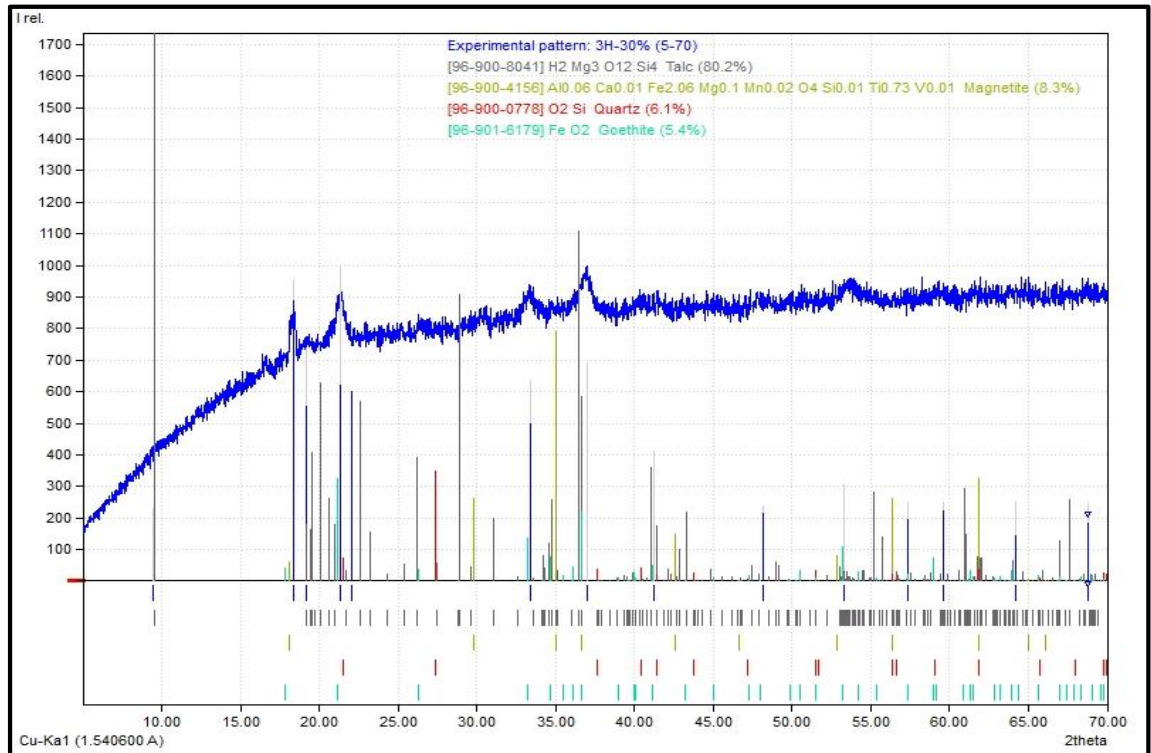
9. Sampel Residu 3 Hari 20%



No	2theta [°]	d [Å]	I/I ₀	FWHM	Matched
1	9,42	9,3810	358,83	27,0773	B
2	18,44	4,8076	359,53	27,0252	A
3	19,02	4,6623	760,61	16,1600	B
4	21,22	4,1836	1000,00	16,1600	B,C,D
5	22,10	4,0190	732,19	16,1600	
6	33,30	2,6884	658,04	16,1600	C
7	36,76	2,4429	700,33	16,1600	B,C
8	41,20	2,1893	375,35	16,1600	B,C,D
9	48,12	1,8894	254,75	0,6800	A,B,C
10	53,32	1,7168	386,71	25,1252	B,C
11	57,10	1,6118	381,50	25,4516	B
12	59,38	1,5552	381,50	25,4684	B,C
13	64,10	1,4516	152,40	3,9350	B,C
14	68,90	1,3617	117,03	12,0690	B,C,D

Index	Amount (%)	Name	Formula sum
A	65,7	Magnetite	Fe ₃ O ₄
B	30,1	Talc	H ₂ Mg ₃ O ₁₂ Si ₄
C	2,3	Goethite	Fe H O ₂
D	1,9	Quartz	O ₂ Si

10. Sampel Residu 3 Hari 30%




No	2theta [°]	d [Å]	I/I ₀	FWHM	Matched
1	9,42	9,3810	230,05	20,8302	A
2	18,38	4,8232	953,31	12,6000	B
3	19,14	4,6333	737,32	12,6000	A
4	21,38	4,1527	1000,00	12,6000	C,D
5	22,10	4,0190	601,96	12,6000	
6	33,38	2,6822	637,97	12,6000	A,D
7	36,96	2,4302	689,32	12,6000	A,B
8	41,20	2,1893	412,60	12,6000	A,C,D
9	48,14	1,8887	239,44	20,0128	A,D
10	53,28	1,7180	306,54	15,6322	A,D
11	57,32	1,6061	249,66	19,1939	A,D
12	59,56	1,5509	251,26	19,0716	A
13	64,22	1,4492	249,81	19,1824	A,D
14	68,76	1,3641	246,51	19,4392	A,D

Index	Amount (%)	Name	Formula sum
A	80,2	Talc	H ₂ Mg ₃ O ₁₂ Si ₄
B	8,3	Magnetite	Al _{0,06} Ca _{0,01} Fe _{2,06} Mg _{0,1} Mn _{0,02} O ₄ Si _{0,01} Ti _{0.73} V _{0,01}
C	6,1	Quartz	O ₂ Si
D	5,4	Goethite	Fe O ₂

Lampiran B

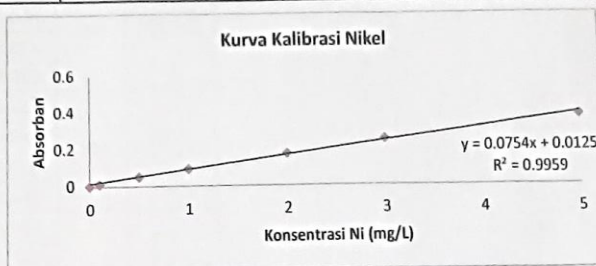
Hasil AAS

	FORMULIR NO:	Tanggal Berlaku : 1 April 2019
	FSOP-7.8-LPPS-FMIPAUH-01.4	Edisi/Revisi Ke : 1/0
LAB. PPS FMIPA UNHAS	REKAMAN HASIL ANALISIS	Halaman : 1/2

Nomor Sampel : LPPS.A-2010-11/10
Tanggal : 21 Oktober 2020
Penerimaan :
Tanggal Analisis : 26 Oktober 2020
Suhu Ruangan : 21.3 °C
Kelembapan : 47 % RH

Optimasi Analisa Nikel (Ni)		
Type Alat: AA 7000 Shimadzu : ASC-7000	Slit width : 0,2 nm Flame type : Air-C ₂ H ₂	Fuel Gas Flow Rate : 2,2 L/min P. Gelombang Max : 232,17 nm
HCL Mn Hamamatsu P. gelombang : 232,0 nm	Burner Height : 7,0 nm Burner angle : 0 degree	
Lamp Current Low (Peak) (mA) : 12		


Ni (mg/L)	Absorban
0	0.0029
0.1	0.0142
0.5	0.052
1	0.0932
2	0.172
3	0.2494
5	0.3786



Persyaratan	Hasil	Keterangan keberterimaan hasil
Linearitas	≥ 0.995	0.996
		Memenuhi

Kode Sampel	Absorban	[Ni] (mg/L)	fp (kali)	[Ni] x fp (mg/L)	B.sampel (G)	Vol. Sampel (mL)	Kadar Ni (mg/kg=ppm)	Kadar Ni (%)
Sampel Awal	0.2327	2.9204	50	145.71	1.0020	100	14542.09	1.446
	0.2326	2.9191						
	0.2314	2.9032						
Rata-Rata =	0.2322	2.914						

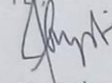
Kode Sampel	Absorban	[Ni] (mg/L)	fp (kali)	Kadar Ni (mg/L)
10% 1 hari	0.1438	1.741	100	174.315
	0.1444	1.749		
	0.1436	1.739		
Rata-Rata =	0.1439	1.743		
20% 1 hari	0.2372	2.980	100	298.541
	0.2375	2.984		
	0.2381	2.992		
Rata-Rata =	0.2376	2.985		

	FORMULIR NO:	Tanggal Berlaku : 1 April 2019
	FSOP-7.8-LPPS-FMIPAUH-01.4	Edisi/Revisi Ke : 1/0
LAB. PPS FMIPA UNHAS	REKAMAN HASIL ANALISIS	Halaman : 2/2

Kode Sampel	Absorban	[Ni] (mg/L)	fp (kali)	Kadar Ni (mg/L)
30% 1 hari	0.2920	3.707	100	373.077
	0.2931	3.721		
	0.2963	3.764		
Rata-Rata =	0.2938	3.731		
10% 2 hari	0.1620	1.983	100	199.646
	0.1635	2.003		
	0.1636	2.004		
Rata-Rata =	0.1630	1.996		
20% 2 hari	0.2390	3.004	100	300.928
	0.2393	3.008		
	0.2399	3.016		
Rata-Rata =	0.2394	3.009		
30% 2 hari	0.2849	3.613	100	363.042
	0.2864	3.633		
	0.2874	3.646		
Rata-Rata =	0.2862	3.630		
10% 3 hari	0.1575	1.923	100	191.158
	0.1563	1.907		
	0.1561	1.905		
Rata-Rata =	0.1566	1.912		
20% 3 hari	0.2238	2.802	100	278.912
	0.2223	2.782		
	0.2223	2.782		
Rata-Rata =	0.2228	2.789		
30% 3 hari	0.2646	3.344	100	335.897
	0.2661	3.363		
	0.2666	3.370		
Rata-Rata =	0.2658	3.359		

Makassar, 27 Oktober 2020

PLP



Fibiyanthi, S.Si

NIP. 19810202 200604 2 001

Lampiran C
Perhitungan Kadar Nikel

Kadar Nikel dihitung dengan menggunakan rumus sebagai berikut:

$$\text{Kadar (\%)} = \frac{\text{Hasil AAS (mg/L)} \times \text{fp} \times \text{volume (L)}}{\text{massa sampel (mg)}} \times 100\%$$

1. Kadar Ni Sampel Awal

$$\text{Kadar (\%)} = \frac{\text{Hasil AAS (mg/L)} \times \text{fp} \times \text{volume (L)}}{\text{massa sampel (mg)}} \times 100\%$$

$$\text{Kadar (\%)} = \frac{2,9142(\text{mg/L}) \times 50 \times 0,1(\text{L})}{1002 (\text{mg})} \times 100\%$$

$$\text{Kadar (\%)} = 1,4541\%$$

2. Kadar Ni Hasil Pelindian 10% 1 Hari

$$\text{Kadar (\%)} = \frac{\text{Hasil AAS (mg/L)} \times \text{fp} \times \text{volume (L)}}{\text{massa sampel (mg)}} \times 100\%$$

$$\text{Kadar (\%)} = \frac{1,743(\text{mg/L}) \times 100 \times 0,1(\text{L})}{10.000(\text{mg})} \times 100\%$$

$$\text{Kadar (\%)} = 0,1743\%$$

3. Kadar Ni Hasil Pelindian 20% 1 Hari

$$\text{Kadar (\%)} = \frac{\text{Hasil AAS (mg/L)} \times \text{fp} \times \text{volume (L)}}{\text{massa sampel (mg)}} \times 100\%$$

$$\text{Kadar (\%)} = \frac{2,985(\text{mg/L}) \times 100 \times 0,1(\text{L})}{10.000(\text{mg})} \times 100\%$$

$$\text{Kadar (\%)} = 0,2985 \%$$

4. Kadar Ni Hasil Pelindian 30% 1 Hari

$$\text{Kadar (\%)} = \frac{\text{Hasil AAS (mg/L)} \times \text{fp} \times \text{volume (L)}}{\text{massa sampel (mg)}} \times 100\%$$

$$\text{Kadar (\%)} = \frac{3,731(\text{mg/L}) \times 100 \times 0,1(\text{L})}{10.000(\text{mg})} \times 100\%$$

$$\text{Kadar (\%)} = 0,3731\%$$

5. Kadar Ni Hasil Pelindian 10% 2 Hari

$$\text{Kadar (\%)} = \frac{\text{Hasil AAS (mg/L)} \times \text{fp} \times \text{volume (L)}}{\text{massa sampel (mg)}} \times 100\%$$

$$\text{Kadar (\%)} = \frac{1,996(\text{mg/L}) \times 100 \times 0,1(\text{L})}{10.000(\text{mg})} \times 100\%$$

$$\text{Kadar (\%)} = 0,1996\%$$

6. Kadar Ni Hasil Pelindian 20% 2 Hari

$$\text{Kadar (\%)} = \frac{\text{Hasil AAS (mg/L)} \times \text{fp} \times \text{volume (L)}}{\text{massa sampel (mg)}} \times 100\%$$

$$\text{Kadar (\%)} = \frac{3,009(\text{mg/L}) \times 100 \times 0,1(\text{L})}{10.000(\text{mg})} \times 100\%$$

$$\text{Kadar (\%)} = 0,3009\%$$

7. Kadar Ni Hasil Pelindian 30% 2 Hari

$$\text{Kadar (\%)} = \frac{\text{Hasil AAS (mg/L)} \times \text{fp} \times \text{volume (L)}}{\text{massa sampel (mg)}} \times 100\%$$

$$\text{Kadar (\%)} = \frac{3,630(\text{mg/L}) \times 100 \times 0,1(\text{L})}{10.000(\text{mg})} \times 100\%$$

$$\text{Kadar (\%)} = 0,363\%$$

8. Kadar Ni Hasil Pelindian 10% 3 Hari

$$\text{Kadar (\%)} = \frac{\text{Hasil AAS (mg/L)} \times \text{fp} \times \text{volume (L)}}{\text{massa sampel (mg)}} \times 100\%$$

$$\text{Kadar (\%)} = \frac{1,912(\text{mg/L}) \times 100 \times 0,1(\text{L})}{10.000(\text{mg})} \times 100\%$$

$$\text{Kadar (\%)} = 0,1912\%$$

9. Kadar Ni Hasil Pelindian 20% 3 Hari

$$\text{Kadar (\%)} = \frac{\text{Hasil AAS (mg/L)} \times \text{fp} \times \text{volume (L)}}{\text{massa sampel (mg)}} \times 100\%$$

$$\text{Kadar (\%)} = \frac{2,789(\text{mg/L}) \times 100 \times 0,1(\text{L})}{10.000(\text{mg})} \times 100\%$$

$$\text{Kadar (\%)} = 0,2789\%$$

10. Kadar Ni Hasil Pelindian 30% 3 Hari

$$\text{Kadar (\%)} = \frac{\text{Hasil AAS (mg/L)} \times \text{fp} \times \text{volume (L)}}{\text{massa sampel (mg)}} \times 100\%$$

$$\text{Kadar (\%)} = \frac{3,359(\text{mg/L}) \times 100 \times 0,1(\text{L})}{10.000(\text{mg})} \times 100\%$$

$$\text{Kadar (\%)} = 0,3359\%$$

Kode Sampel	Hasil AAS (mg/L)	Fp	Volume (L)	Berat (mg)	Kadar (%)
Sampel Awal	2,9142	50	0,10	1002	1,4541
10% 1 Hari	1,743	100	0,10	10.000	0,1743
20% 1 Hari	2,985	100	0,10	10.000	0,2985
30% 1 Hari	3,731	100	0,10	10.000	0,3731
10% 2 Hari	1,996	100	0,10	10.000	0,1996
20% 2 Hari	3,009	100	0,10	10.000	0,3009
30% 2 Hari	3,630	100	0,10	10.000	0,363
10% 3 Hari	1,912	100	0,10	10.000	0,1912
20% 3 Hari	2,789	100	0,10	10.000	0,2789
30% 3 Hari	3,359	100	0,10	10.000	0,3359

Lampiran D
Recovery Nikel

Recovery Nikel

Recovery Nikel hasil analisis AAS dapat dihitung dengan menggunakan rumus:

$$\text{Recovery} = \frac{\text{Kadar hasil pelindian}}{\text{Kadar awal}} \times 100\%$$

1. *Recovery* Ni Hasil Pelindian 10% 1 Hari

$$\text{Recovery} = \frac{\text{Kadar hasil pelindian}}{\text{Kadar awal}} \times 100\%$$

$$\text{Recovery} = \frac{0,1743\%}{1,4541\%} \times 100\%$$

$$\text{Recovery} = 11,98\%$$

2. *Recovery* Ni Hasil Pelindian 20% 1 Hari

$$\text{Recovery} = \frac{\text{Kadar hasil pelindian}}{\text{Kadar awal}} \times 100\%$$

$$\text{Recovery} = \frac{0,2985\%}{1,4541\%} \times 100\%$$

$$\text{Recovery} = 20,52\%$$

3. *Recovery* Ni Hasil Pelindian 30% 1 Hari

$$\text{Recovery} = \frac{\text{Kadar hasil pelindian}}{\text{Kadar awal}} \times 100\%$$

$$\text{Recovery} = \frac{0,3731\%}{1,4541\%} \times 100\%$$

$$\text{Recovery} = 25,65\%$$

4. *Recovery* Ni Hasil Pelindian 10% 2 Hari

$$\text{Recovery} = \frac{\text{Kadar hasil pelindian}}{\text{Kadar awal}} \times 100\%$$

$$\text{Recovery} = \frac{0,1996\%}{1,4541\%} \times 100\%$$

$$\text{Recovery} = 13,72\%$$

5. *Recovery* Ni Hasil Pelindian 20% 2 Hari

$$\text{Recovery} = \frac{\text{Kadar hasil pelindian}}{\text{Kadar awal}} \times 100\%$$

$$\text{Recovery} = \frac{0,3009\%}{1,4541\%} \times 100\%$$

$$\text{Recovery} = 20,69\%$$

6. *Recovery* Ni Hasil Pelindian 30% 2 Hari

$$\text{Recovery} = \frac{\text{Kadar hasil pelindian}}{\text{Kadar awal}} \times 100\%$$

$$\text{Recovery} = \frac{0,363\%}{1,4541\%} \times 100\%$$

$$\text{Recovery} = 24,96\%$$

7. *Recovery* Ni Hasil Pelindian 10% 3 Hari

$$\text{Recovery} = \frac{\text{Kadar hasil pelindian}}{\text{Kadar awal}} \times 100\%$$

$$\text{Recovery} = \frac{0,1912\%}{1,4541\%} \times 100\%$$

$$\text{Recovery} = 13,14\%$$

8. *Recovery* Ni Hasil Pelindian 20% 3 Hari

$$\text{Recovery} = \frac{\text{Kadar hasil pelindian}}{\text{Kadar awal}} \times 100\%$$

$$\text{Recovery} = \frac{0,2789\%}{1,4541\%} \times 100\%$$

$$\text{Recovery} = 19,18\%$$

9. *Recovery* Ni Hasil Pelindian 30% 3 Hari

$$\text{Recovery} = \frac{\text{Kadar hasil pelindian}}{\text{Kadar awal}} \times 100\%$$

$$\text{Recovery} = \frac{0,3359\%}{1,4541\%} \times 100\%$$

$$\text{Recovery} = 23,10\%$$

Kode Sampel	Kadar Awal (%)	Kadar Akhir (%)	Recovery (%)
10% 1 Hari	1,4541	0,1743	11,98
20% 1 Hari	1,4541	0,2985	20,52
30% 1 Hari	1,4541	0,3731	25,65
10% 2 Hari	1,4541	0,1996	13,72
20% 2 Hari	1,4541	0,3009	20,69
30% 2 Hari	1,4541	0,363	24,96
10% 3 Hari	1,4541	0,1912	13,14
20% 3 Hari	1,4541	0,2789	19,18
30% 3 Hari	1,4541	0,3359	23,10






Lampiran E
Kartu Konsultasi Tugas Akhir

Lampiran B 10

Kartu Konsultasi Tugas Akhir

JUDUL: STUDI EKSTRAKSI NIKEL DARI BIJIH LIMONIT
MENGUNAKAN ASAM OKSALAT

(Konsultasi minimal 8 kali)

TANGGAL	MATERI KONSULTASI	PARAF DOSEN
13/01/2021	Asistensi Abstrak, Bab 1, Bab 2, Bab 3, Bab 4	
14/01/2021	Asistensi Abstrak dan kesimpulan	
02/02/2021	Asistensi Bab V	
03/03/2021	Asistensi Bab IV	
25/03/2021	ACC SKRIPSI	

TANGGAL	MATERI KONSULTASI	PARAF DOSEN
13/01/2021	Asistensi Bab 1 - Bab 2	UH
17/01/2021	Asistensi hasil XRD dan AFIS	UH
18/01/2021	Asistensi Bab 10 dan kesimpulan	UH
21/09/2021	ACC	