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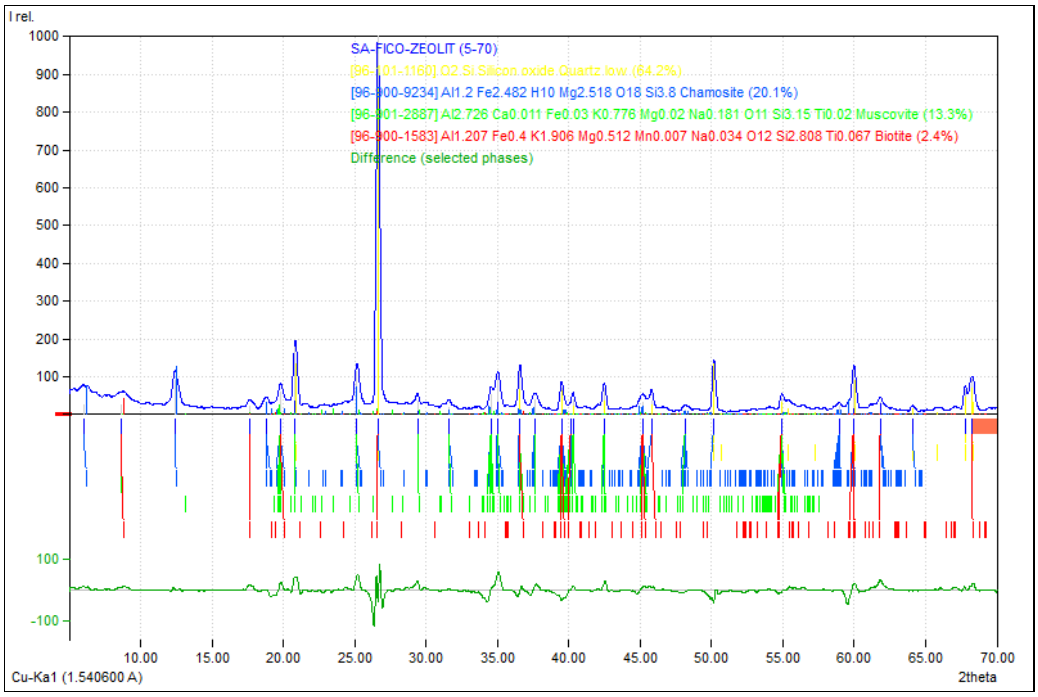
LAMPIRAN

Lampiran 1
HASIL ANALISIS XRD

Tabel *peak list* sampel awal

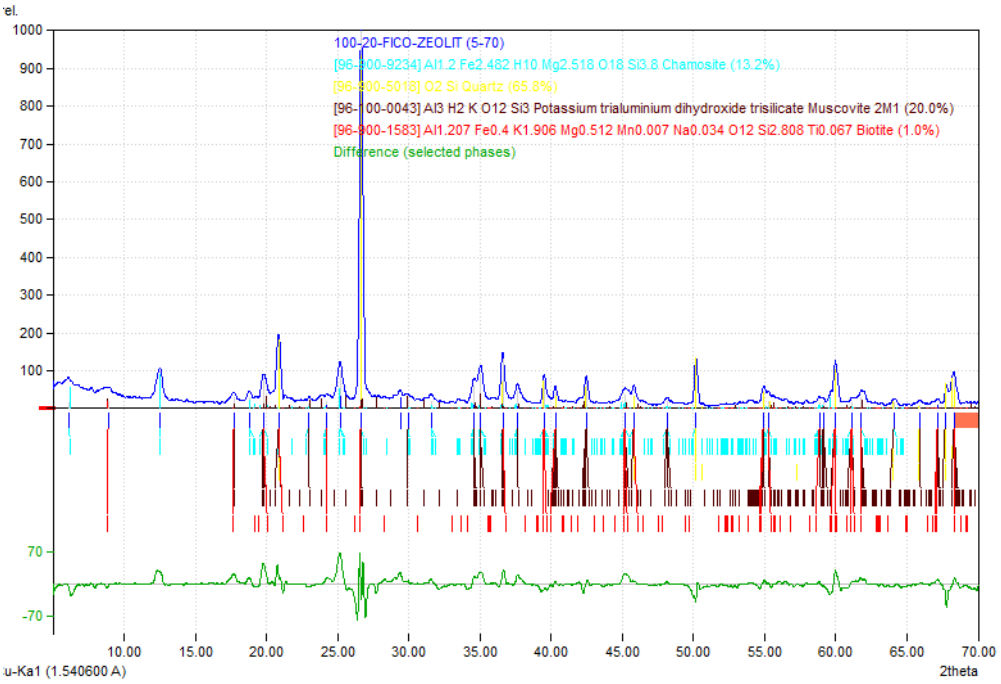
No.	2theta [°]	d [Å]	I/I0 (peak height)	Counts (peak area)	FWHM	Matched
1	6.02	14.6695	26.61	48.88	1.4542	B
2	8.66	10.2025	25.24	34.59	1.0849	C,D
3	12.44	7.1096	91.29	50.62	0.4389	B
4	17.64	5.0238	21.28	13.77	0.5122	C,D
5	18.80	4.7163	28.10	16.49	0.4647	B
6	19.82	4.4759	59.76	36.36	0.4818	B,C,D
7	20.84	4.2590	177.78	71.28	0.3174	A,B,C
8	25.16	3.5367	114.79	55.73	0.3843	B,C
9	26.64	3.3435	1000.00	337.52	0.2672	A,B,C,D
10	29.40	3.0356	35.44	15.24	0.3403	C
11	31.60	2.8291	19.03	10.38	0.4316	B,C
12	34.56	2.5932	52.54	23.89	0.3600	B,C
13	35.04	2.5588	90.81	40.86	0.3562	B,C
14	36.58	2.4545	112.78	42.88	0.3010	A,B,C,D
15	37.62	2.3890	39.38	22.37	0.4497	B,C
16	39.50	2.2796	70.54	24.12	0.2706	A,B,C,D
17	40.12	2.2457	0.22	0.10	0.3600	B,C,D
18	40.30	2.2361	39.56	14.32	0.2865	A,B,C
19	42.50	2.1253	69.07	23.41	0.2684	A,B,C
20	45.18	2.0053	33.81	52.72	1.2346	B,C,D
21	45.80	1.9796	34.58	8.78	0.2009	A,B,D
22	48.16	1.8879	12.53	5.70	0.3600	B,C
23	50.18	1.8166	133.30	41.30	0.2453	A,B
24	54.92	1.6705	41.40	16.74	0.3200	A,B,C,D
25	58.94	1.5658	20.69	18.82	0.7200	B
26	59.98	1.5411	117.29	48.72	0.3289	A,B,D
27	61.82	1.4995	32.65	28.94	0.7018	B,D
28	64.06	1.4524	14.06	4.97	0.2800	A,B
29	67.76	1.3818	67.35	23.82	0.2800	A
30	68.24	1.3733	95.03	46.74	0.3894	A,D



Gambar grafik diffraction pattern sampel awal

Tabel peak list sampel setelah Flotasi

No.	2theta [°]	d [Å]	*I/I0 (peak height)*	*Counts (peak area)*	FWHM	*Matched*
1	6.10	14.4773	14.91	7.60	0.4180	A
2	8.94	9.8836	17.14	13.08	0.6260	C,D
3	12.52	7.0644	79.78	42.80	0.4400	A
4	17.70	5.0069	27.80	17.78	0.5245	C,D
5	18.80	4.7163	27.85	16.90	0.4975	A
6	19.80	4.4803	73.46	42.85	0.4784	A,C,D
7	20.86	4.2550	182.98	70.92	0.3179	A,B,C,D
8	23.00	3.8637	12.32	6.38	0.4243	A,C
9	24.24	3.6688	19.63	26.59	1.1110	A,D
10	25.18	3.5339	100.81	50.35	0.4096	A
11	26.66	3.3410	1000.00	320.26	0.2627	A,B,C,D
12	29.40	3.0356	29.99	35.10	0.9600	
13	29.94	2.9820	22.01	18.25	0.6800	A,C
14	31.56	2.8326	18.88	12.51	0.5434	A
15	34.58	2.5918	60.48	29.49	0.4000	A,C
16	35.06	2.5574	91.67	39.74	0.3555	A,C
17	36.60	2.4532	130.86	46.36	0.2905	A,B,C,D
18	37.64	2.3878	46.17	24.27	0.4312	A,C
19	39.52	2.2784	74.27	22.67	0.2504	A,B,D
20	40.30	2.2361	41.69	14.54	0.2860	A,B,C,D
21	42.48	2.1263	72.65	24.02	0.2712	A,B,C
22	45.18	2.0053	37.02	48.47	1.0736	A,C,D
23	45.80	1.9796	32.63	10.36	0.2604	A,B,C,D
24	48.14	1.8887	17.50	8.86	0.4149	A,C
25	50.18	1.8166	124.23	35.04	0.2313	A,B
26	54.96	1.6693	44.34	21.62	0.4000	A,B,C,D
27	55.28	1.6604	19.25	9.82	0.4186	A,B,C,D
28	58.84	1.5682	16.52	13.34	0.6627	A,C,D
29	59.12	1.5614	16.64	5.68	0.2800	A,C
30	59.96	1.5415	105.30	48.61	0.3786	A,B,C,D
31	61.14	1.5146	14.51	19.61	1.1088	A,C,D
32	61.78	1.5004	29.22	15.95	0.4476	A,C,D
33	64.08	1.4520	14.14	5.07	0.2944	A,B,C
34	65.92	1.4159	7.76	3.29	0.3480	B,C
35	67.16	1.3927	13.14	7.37	0.4603	C,D
36	67.74	1.3822	52.26	12.41	0.2000	B,C
37	68.30	1.3722	84.55	40.15	0.4000	B,C,D



Gambar grafik diffraction pattern setelah flotasi

Lampiran 2
HASIL ANALISIS AAS

Kode Sampel	Nama Sampel	Satuan	Konsentrasi Logam Au
LPPs.A-2401-10/19a	Sampel awal	mg/kg	20.63
LPPS.A-2401-10/19b	K-75 W-15 M	mg/kg	17.15
LPPS.A—2401-10/19c	K-75 W-20 M	mg/kg	19.56
LPPS.A-2401-10/19d	K-75 W-25 M	mg/kg	7.14
LPPS.A-2401-10/19e	K-100 W-15 M	mg/kg	14.03
LPPS.A-2401-10/19f	K-100 W-20 M	mg/kg	46.09
LPPS.A-2401-10/19g	K-100 W-25 M	mg/kg	9.17
LPPS.A-2401-10/19h	K-200 W-15 M	mg/kg	12.59
LPPS A-2401-10/liii	K-200 W-20 M	mg/kg	14.52
LPPS.A—2401-10/19j	K-200 W-25 M	mg/kg	14.60
LPPS.A-2401-10/19k	T-75 W-15 M	mg/kg	8.11
LPPS.A-2401-10/191	T-75 W-20 M	mg/kg	5.22
LPPS.A-2401-10/19m	T-75 W-25 M	mg/kg	8.54
LPPS.A-2401-10/19n	T-100 W-15 M	mg/kg	7.65
LPPS.A-2401-10/19o	T-100 W-20 M	mg/kg	7.76
LPPS.A-2401-10/19p	T-100 W-25 M	mg/kg	7.97
LPPS.A-2401-10/l9q	T-200 W-15 M	mg/kg	7.64
LPPS.A-2401-10/19r	T-200 W-20 M	mg/kg	7.54
LPPS.A-2401-10/19s	T-200 W-25 M	mg/kg	8.75

Lampiran 3

PERHITUNGAN *RECOVERY*

1. *Recovery* Au sampel hasil flotasi kolom

a. *Recovery* Au K-75 W-15 $= \frac{C.c}{F.f} x100\%$

$= \frac{10,8504\ x\ 17,15}{200\ x\ 20,63} x100\%$

$= 19,194601734\%$

b. *Recovery* Au K-75 W-20 $= \frac{C.c}{F.f} x100\%$

$= \frac{21,2425\ x\ 19,86}{200\ x\ 20,63} x100\%$

$= 43,5165145575\%$

c. *Recovery* Au K-75 W-25 $= \frac{C.c}{F.f} x100\%$

$= \frac{14,62\ x\ 7,14}{200\ x\ 20,63} x100\%$

$= 10,76749842\%$

d. *Recovery* Au K-100 W-15 $= \frac{C.c}{F.f} x100\%$

$= \frac{13,2913\ x\ 14,03}{200\ x\ 20,63} x100\%$

$= 19,23509625785\%$

e. *Recovery* Au K-100 W-20 $= \frac{C.c}{F.f} x100\%$

$= \frac{12,1991\ x\ 46,09}{200\ x\ 20,63} x100\%$

$= 57,99675993485\%$

f. *Recovery* Au K-100 W-25 $= \frac{C.c}{F.f} x100\%$

$= \frac{27,45\ x\ 9,17}{200\ x\ 20,63} x100\%$

$= 25,964556975\%$

g. *Recovery* Au K-200 W-15 $= \frac{C.c}{F.f} x100\%$

$= \frac{11,415\ x\ 12,59}{200\ x\ 20,63} x100\%$

$= 14,8241867775\%$

h. *Recovery* Au K-200 W-20 $= \frac{C.c}{F.f} x100\%$

$= \frac{13,9035\ x\ 14,52}{200\ x\ 20,63} x100\%$

$= 20,823800283\%$

i. *Recovery* Au K-200 W-25 = $\frac{C.c}{F.f} x100\%$

$= \frac{14{,}405 \; x \; 14{,}6}{200 \; x \; 20{,}63} x100\%$

= 21,69378595%

Lampiran 4

KARTU KONSULTASI TUGAS AKHIR

Lampiran B 10

Kartu Konsultasi Tugas Akhir

JUDUL: STUDI PENINGKATAN DAN RECOVERY EMAS MENGGUNAKAN METODE FLOTASI KOLOM DARI BIJIH OKSIDA PADA DAERAH ADOW, KABUPATEN BOLAANG MONGONDOW SELATAN, SULAWESI UTARA

(Konsultasi minimal 8 kali)

TANGGAL	MATERI KONSULTASI	PARAF DOSEN
31-05-2024	o) Perbaikan Bab II o) Perbaikan Bab III	
03-06-2024	o) Perbaikan Bab I o) Perbaikan Catatan Kaki	
04-06-2024	o) Perbaikan Bab III o) Perbaikan Grafik Bab IV	
05-06-2024	o) Perbaikan Hasil Mikroskopis	
06-06-2024	o) Perbaikan Tabel o) Perbaikan Bab IV	
07-06-2024	o) Perbaikan Abstrak	
08-06-2024	o) Perbaikan Bab V	
10-06-2024	o) Perbaikan Kata dan Kalimat Asing o) Perbaikan Bab IV o) Perbaikan Kesimpulan	
11-06-2024	o) Perbaikan Bab IV o) Perbaikan Kesimpulan o) Perbaikan Abstrak	

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TANGGAL	MATERI KONSULTASI	PARAF DOSEN
12-06-2024		