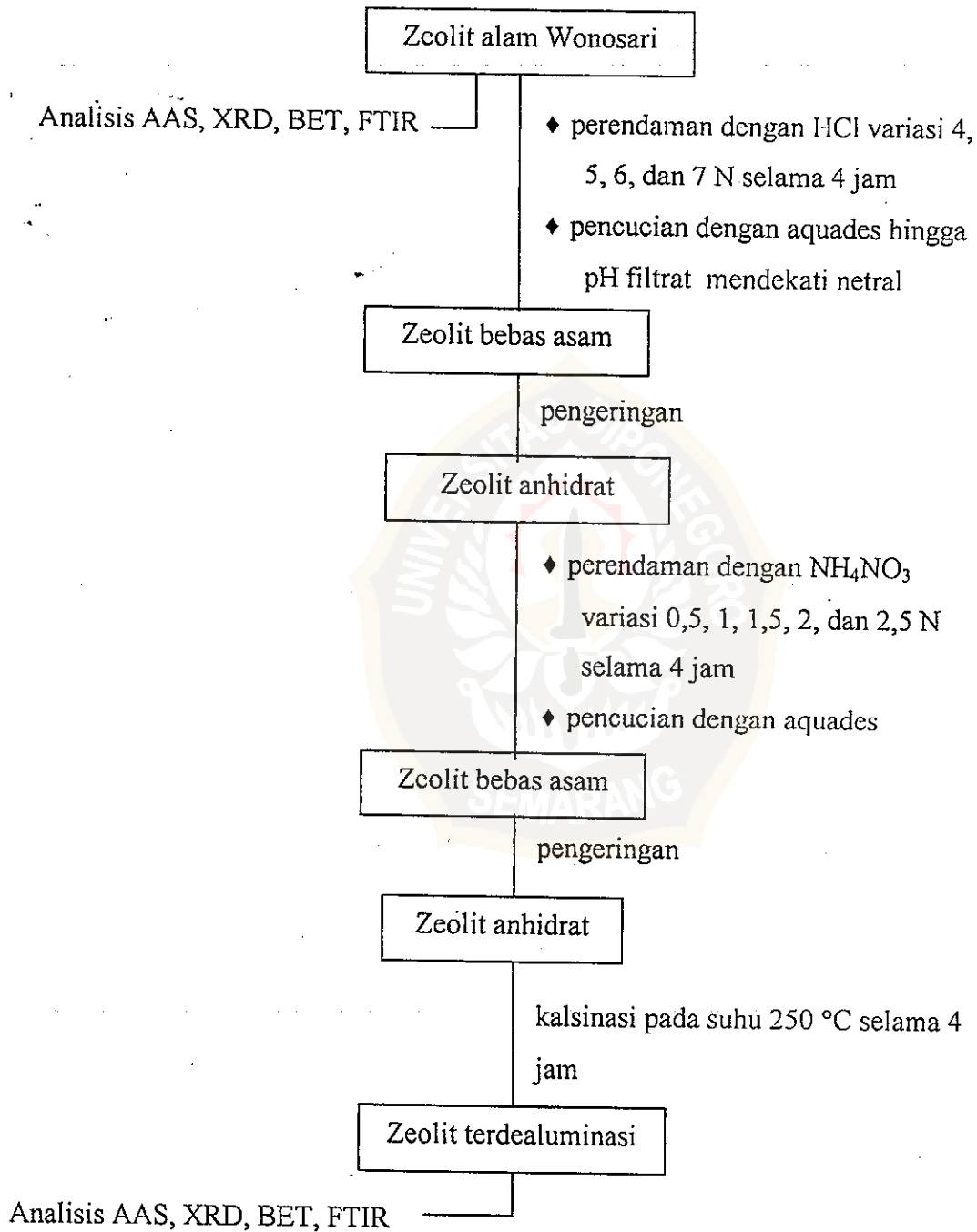


# LAMPIRAN

## Lampiran 1

### Skema kerja



## Lampiran 2

### Perhitungan Preparasi Bahan

#### 2.1 Pembuatan larutan HCl

Diketahui:  $\rho_{\text{HCl}} = 1,19 \text{ g/mL}$        $M_r \text{ HCl} = 36,46 \text{ g/mol}$

$\% \text{ w/w} = 37 \%$        $n_{\text{eq}} = 1$

$$N_o = \% \text{ w/w} \times \frac{\rho}{M_r} \times n_{\text{eq}}$$

$$N_o = \frac{37}{100} \times \frac{1,19 \text{ g/mL}}{36,46 \text{ g/mol}} \times 1 = 12,08 \text{ N}$$

$$V_o = \frac{N \times V}{N_o} \quad \text{dimana } V_o : \text{Volume HCl } 37 \% \text{ yang dibutuhkan}$$

$N_o$  : Normalitas HCl 37 % (HCl awal)

$N$  : Normalitas larutan HCl yang diinginkan

$V$  : Volume larutan HCl yang diinginkan

- Pembuatan larutan HCl 4 N

$$V_o = \frac{4 \text{ N} \times 1000 \text{ mL}}{12,08 \text{ N}} = 331,13 \text{ mL}$$

- Pembuatan larutan HCl 5 N

$$V_o = \frac{5 \text{ N} \times 1000 \text{ mL}}{12,08 \text{ N}} = 413,91 \text{ mL}$$

- Pembuatan larutan HCl 6 N

$$V_o = \frac{6 \text{ N} \times 1000 \text{ mL}}{12,08 \text{ N}} = 496,69 \text{ mL}$$

- Pembuatan larutan HCl 7 N

$$V_o = \frac{6N \times 1000mL}{12,08N} = 579,47mL$$

## 2.2 Pembuatan larutan $NH_4NO_3$

Diketahui:  $Mr NH_4NO_3 = 80,04 \text{ g/mol}$

$$n_{eq} = 1$$

$$N = \frac{m/Mr}{V} \times n_{eq}$$

$$m = Mr \times V \times N \times n_{eq}$$

dimana N: Normalitas  $NH_4NO_3$  yang diinginkan

V: Volume  $NH_4NO_3$  yang diinginkan

m: Berat  $NH_4NO_3$  yang dibutuhkan

- Pembuatan larutan  $NH_4NO_3$  0,5 N

$$m = 80,04 \text{ g/mol} \times 1L \times 0,5 N \times 1 = 40,02 \text{ g}$$

- Pembuatan larutan  $NH_4NO_3$  1 N

$$m = 80,04 \text{ g/mol} \times 1 L \times 1 N \times 1 = 80,04 \text{ g}$$

- Pembuatan larutan  $NH_4NO_3$  1,5 N

$$m = 80,04 \text{ g/mol} \times 1 L \times 1,5 N \times 1 = 120,06 \text{ g}$$

- Pembuatan larutan  $NH_4NO_3$  2 N

$$m = 80,04 \text{ g/mol} \times 1 L \times 2 N \times 1 = 160,08 \text{ g}$$

- Pembuatan larutan  $NH_4NO_3$  2,5 N

$$m = 80,04 \text{ g/mol} \times 1 L \times 2,5 N \times 1 = 200,1 \text{ g}$$

### Lampiran 3

#### Perhitungan Rasio Si/Al

$$\text{Ar Si} = 28,09 \text{ g/mol}$$

$$\text{Ar Al} = 26,98 \text{ g/mol}$$

$$\frac{\text{Si}}{\text{Al}} = \frac{\% \text{Si}}{\text{Ar Si}} \div \frac{\% \text{Al}}{\text{Ar Al}}$$

#### 3.1 Rasio Si/Al Zeolit Alam

$$\% \text{ Si} = 34,39$$

$$\% \text{ Al} = 6,21$$

$$\frac{\text{Si}}{\text{Al}} = \frac{34,39}{28,09} \div \frac{6,21}{26,98} = 5,32$$

#### 3.2 Rasio Si/Al Zeolit Terdealuminasi Pada Variasi Konsentrasi HCl

- HCl 4 N

$$\% \text{ Si} = 34,00$$

$$\% \text{ Al} = 5,64$$

$$\frac{\text{Si}}{\text{Al}} = \frac{34,00}{28,09} \div \frac{5,64}{26,98} = 5,79$$

- HCl 5 N

$$\% \text{ Si} = 34,20$$

$$\% \text{ Al} = 4,79$$

$$\frac{\text{Si}}{\text{Al}} = \frac{34,20}{28,09} \div \frac{4,79}{26,98} = 6,86$$

- HCl 6 N

$$\% \text{ Si} = 39,52$$

$$\% \text{ Al} = 1,41$$

$$\frac{\text{Si}}{\text{Al}} = \frac{39,52}{28,09} \div \frac{1,41}{26,98} = 26,87$$

- HCl 7 N

$$\% \text{ Si} = 33,00 \quad \% \text{ Al} = 5,90$$

$$\frac{\text{Si}}{\text{Al}} = \frac{33,00}{28,09} \div \frac{5,90}{26,98} = 5,37$$

### 3.3 Rasio Si/Al Zeolit Terdealuminasi Pada Variasi Konsentrasi $\text{NH}_4\text{NO}_3$

- $\text{NH}_4\text{NO}_3$  0,5 N

$$\frac{\text{Si}}{\text{Al}} = \frac{32,30}{28,09} \div \frac{5,24}{26,98} = 5,92$$

- $\text{NH}_4\text{NO}_3$  1 N

$$\frac{\text{Si}}{\text{Al}} = \frac{32,90}{28,09} \div \frac{5,24}{26,98} = 6,03$$

- $\text{NH}_4\text{NO}_3$  1,5 N

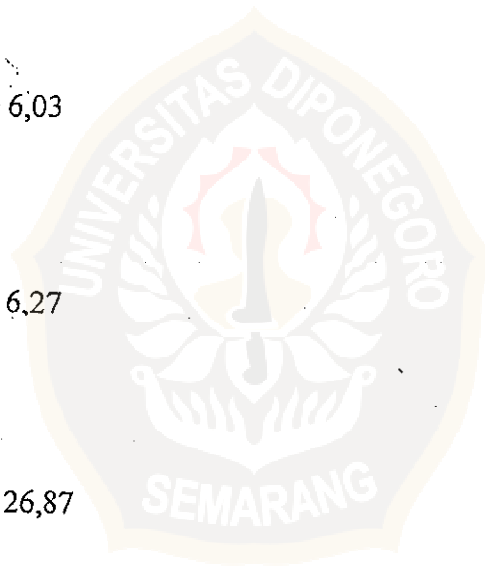
$$\frac{\text{Si}}{\text{Al}} = \frac{33,50}{28,09} \div \frac{5,12}{26,98} = 6,27$$

- $\text{NH}_4\text{NO}_3$  2 N

$$\frac{\text{Si}}{\text{Al}} = \frac{39,52}{28,09} \div \frac{1,41}{26,98} = 26,87$$

- $\text{NH}_4\text{NO}_3$  2,5 N

$$\frac{\text{Si}}{\text{Al}} = \frac{27,90}{28,09} \div \frac{6,38}{26,98} = 4,20$$



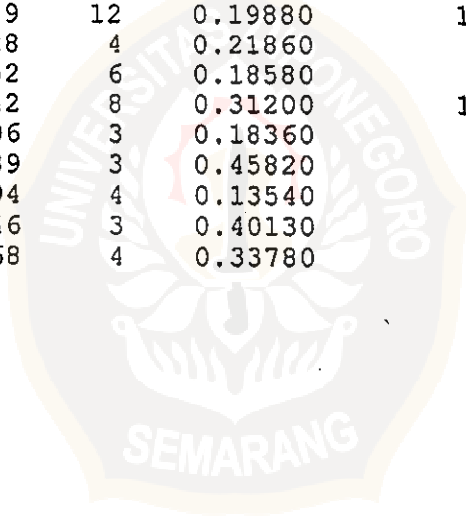
## Lampiran 4

## 4.1 Hasil Analisis XRD Zeolit Alam

# Strongest 3 peaks	no.	peak no.	2Theta (deg)	d (Å)	I/I1	FWHM (deg)	Intensity (Counts)	Integrated Int (Counts)
1	30	25.5794	3.47964	100	0.21870	1626	21355	
2	22	22.1739	4.00575	62	0.28300	1009	16306	
3	35	27.6577	3.22271	55	0.45040	893	19861	

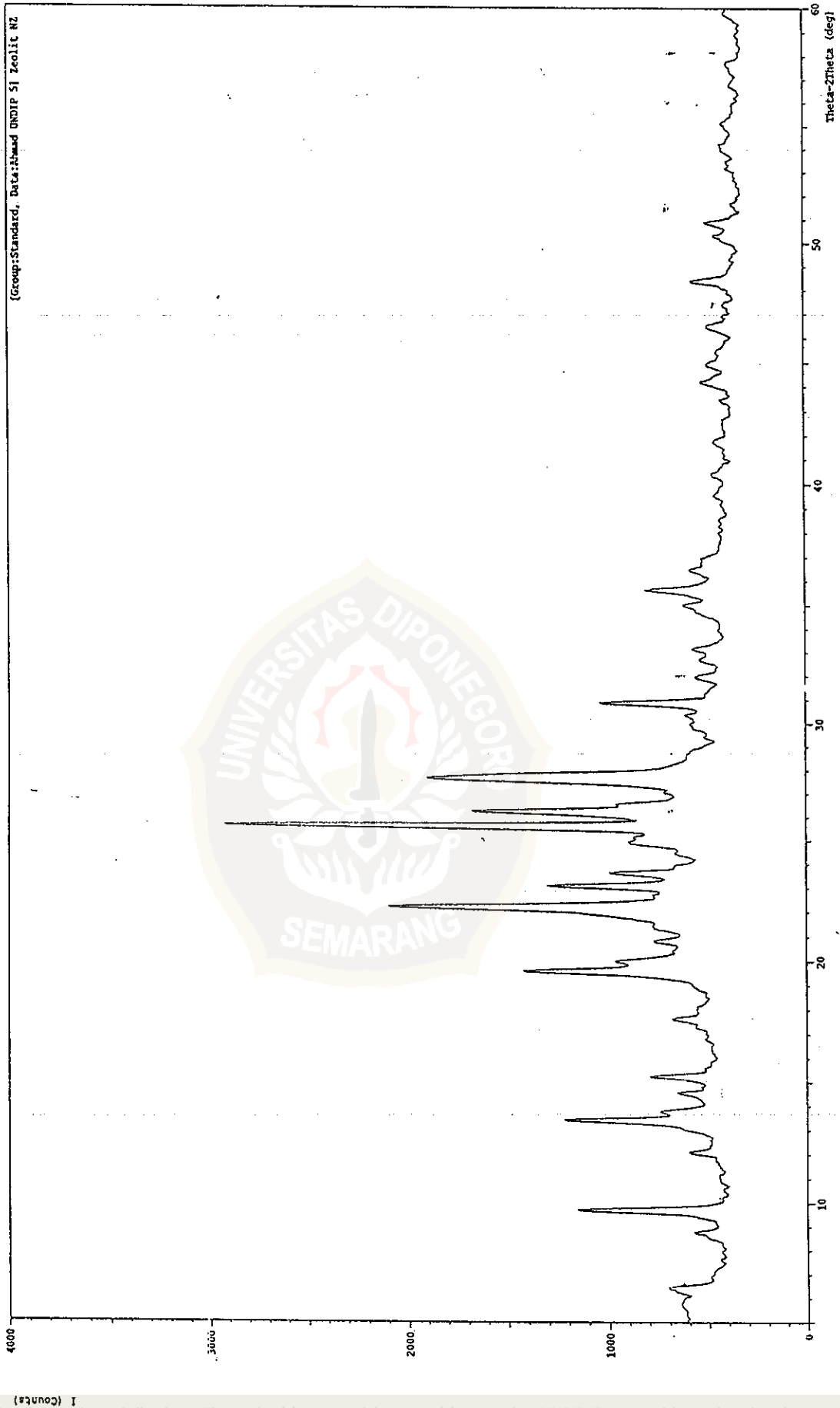
# Peak Data List	peak no.	2Theta (deg)	d (Å)	I/I1	FWHM (deg)	Intensity (Counts)	Integrated Int (Counts)
1	5.8800	15.01847	3	0.62860	54	1569	
2	6.2600	14.10764	5	0.23000	86	810	
3	6.4400	13.71372	8	0.22900	132	1454	
4	8.5600	10.32150	3	0.18940	55	454	
5	8.7300	10.12088	6	0.30000	102	1344	
6	9.3600	9.44104	4	0.18000	71	1107	
7	9.6923	9.11808	31✓	0.25050	503	6922	
8	12.0818	7.31957	6	0.22090	102	1683	
9	13.0400	6.78379	6	0.25200	105	1971	
10	13.3928	6.60587	31✓	0.25380	500	5970	
11	13.7600	6.43040	11	0.27820	174	3064	
12	14.5261	6.09294	7	0.23620	115	1858	
13	15.2195	5.81687	13	0.22900	214	3065	
14	17.3200	5.11587	3	0.23560	55	947	
15	17.6141	5.03111	8	0.27830	133	2601	
16	19.2800	4.59999	7	0.17100	116	1859	
17	19.5625	4.53419	36✓	0.27310	581	7431	
18	19.9800	4.44038	16	0.28220	259	5214	
19	20.8082	4.26547	6	0.22080	104	1348	
20	21.4200	4.14501	6	0.38000	94	1725	
21	21.7600	4.08100	12	0.31200	192	4038	
22	22.1739	4.00575	62✓	0.28300	1009	16306	
23	22.6800	3.91750	6	0.00000	97	0	
24	23.0667	3.85269	30	0.23530	481	6939	
25	23.5979	3.76715	17✓	0.24290	280	3866	
26	23.9400	3.71409	4	0.14760	60	681	
27	24.4600	3.63629	4	0.25720	62	893	
28	24.9400	3.56739	12	0.45200	200	3938	
29	25.1200	3.54223	11	0.00000	184	0	
30	25.5794	3.47964	100✓	0.21870	1626	21355	
31	26.1931	3.39949	45✓	0.27920	738	11079	
32	26.5400	3.35584	15	0.21680	236	3290	
33	27.0600	3.29252	5	0.24000	82	1134	
34	27.3000	3.26412	11	0.17180	177	1707	
35	27.6577	3.22271	55✓	0.45040	893	19861	
36	28.2000	3.16196	6	0.00000	95	0	
37	28.3000	3.15101	4	0.00000	70	0	
38	28.5600	3.12291	3	0.00000	54	0	
39	28.6800	3.11012	4	0.00000	61	0	
40	28.8200	3.09533	4	0.22800	57	773	
41	29.7600	2.99966	5	0.18660	74	1428	
42	29.9600	2.98009	5	0.00000	82	0	
43	30.3400	2.94363	6	0.21340	100	2248	
44	30.8367	2.89734	25	0.22450	412	5627	

peak no.	2Theta (deg)	d (A)	I/I1	FWHM (deg)	Intensity (Counts)	Integrated Int (Counts)
45	31.9387	2.79984	5	0.26750	80	1206
46	32.7000	2.73637	4	0.33000	70	1186
47	33.1327	2.70162	6	0.25890	99	1478
48	34.5400	2.59470	3	0.15120	54	931
49	34.7200	2.58165	5	0.00000	89	0
50	34.9600	2.56448	8	0.33780	127	2152
51	35.3200	2.53916	5	0.17000	87	934
52	35.5858	2.52080	17	0.24990	269	3697
53	36.2600	2.47546	4	0.20000	64	805
54	36.4400	2.46365	7	0.28440	110	1598
55	36.7600	2.44293	4	0.00000	66	0
56	36.9400	2.43144	4	0.16660	67	962
57	40.3700	2.23241	4	0.28000	62	1548
58	41.7125	2.16361	3	0.39500	56	1960
59	44.0000	2.05629	4	0.16000	64	515
60	44.1800	2.04833	6	0.20800	102	1010
61	44.4400	2.03695	3	0.16000	49	435
62	44.8923	2.01747	5	0.35260	81	2114
63	46.4280	1.95425	5	0.34400	87	2075
64	48.1200	1.88941	3	0.12920	53	642
65	48.3519	1.88089	12	0.19880	187	2295
66	50.1000	1.81928	4	0.21860	71	942
67	50.3000	1.81252	6	0.18580	96	933
68	50.8127	1.79542	8	0.31200	129	2524
69	53.1762	1.72106	3	0.18360	52	683
70	53.9600	1.69789	3	0.45820	55	1233
71	54.2000	1.69094	4	0.13540	58	444
72	55.0273	1.66746	3	0.40130	54	1750
73	59.7400	1.54668	4	0.33780	62	1431



\*\*\* Multi Plot \*\*\*

File Name : Standard\Ahmad UNDIP 5  
 Sample Name : Zeolit NZ  
 Date & Time : 03-13-03 13:24:02  
 Condition  
 X-ray Tube : Cu(1.54060 A) Voltage : 40.0 kV Current : 30.0 mA  
 Scan Range : 5.0000 <-> 60.0000 deg Step Size : 0.0200 deg  
 Count Time : 0.24 sec Slit DS : 1.00 deg SS : 1.00 deg RS : 0.30 mm  
 Comment : Zeolit NZ





## 4.2 Hasil Analisis XRD Zeolit Terdealuminasi

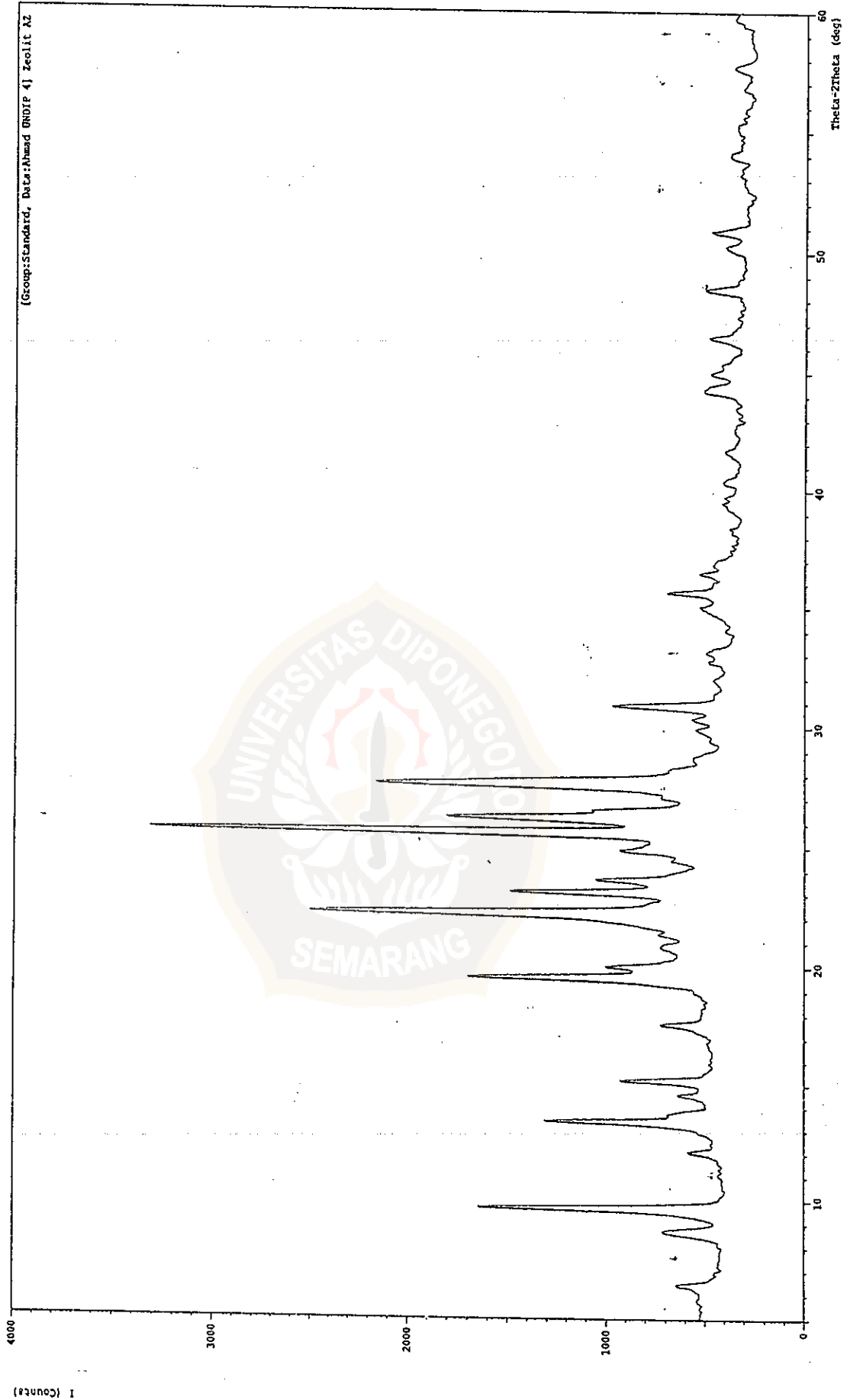
# Strongest 3 peaks	no.	peak no.	2Theta (deg)	d (A)	I/I1	FWHM (deg)	Intensity (Counts)	Integrated Int (Counts)
1	28	25.5975	3.47723	100	0.22060	1907	22835	
2	21	22.1897	4.00294	68	0.28210	1292	22506	
3	32	27.5600	3.23391	58	0.28240	1102	16124	

# Peak Data List	peak no.	2Theta (deg)	d (A)	I/I1	FWHM (deg)	Intensity (Counts)	Integrated Int (Counts)
1	6.2000	14.24403	3	0.99560	58	1938	
2	6.4002	13.79891	7	0.30050	133	1731	
3	8.6490	10.21549	11	0.37800	203	4299	
4	9.2000	9.60487	3	0.25140	64	1963	
5	9.6677	9.14123	44	0.25410	834	11695	
6	12.0777	7.32205	5	0.23040	97	1319	
7	13.1600	6.72220	8	0.20400	152	2247	
8	13.3850	6.60971	30	0.25730	572	6688	
9	13.8000	6.41186	6	0.21720	115	2263	
10	14.5443	6.08536	6	0.23530	115	1966	
11	15.1850	5.83001	17	0.24240	318	4673	
12	17.5885	5.03837	9	0.25710	164	2929	
13	19.2200	4.61421	6	0.14000	117	1340	
14	19.5421	4.53888	41	0.25730	786	10631	
15	20.0000	4.43598	15	0.24940	292	4360	
16	20.2400	4.38392	4	0.13720	77	687	
17	20.7927	4.26862	4	0.38550	73	1435	
18	21.3400	4.16036	4	0.19500	80	777	
19	21.6400	4.10336	7	0.23000	129	2385	
20	21.8200	4.06992	12	0.00000	231	0	
21	22.1897	4.00294	68	0.28210	1292	22506	
22	22.6600	3.92091	6	0.00000	112	0	
23	23.0855	3.84959	32	0.23680	617	8873	
24	23.5764	3.77054	17	0.29290	331	4943	
25	23.9200	3.71715	3	0.17340	66	832	
26	24.4400	3.63922	4	0.17720	81	803	
27	24.9459	3.56656	12	0.44810	235	6375	
28	25.5975	3.47723	100	0.22060	1907	22835	
29	26.1978	3.39889	44	0.31850	833	14130	
30	26.5400	3.35584	17	0.18520	324	3754	
31	27.0400	3.29491	6	0.17540	106	1468	
32	27.5600	3.23391	58	0.28240	1102	16124	
33	27.8000	3.20654	33	0.19400	635	6795	
34	28.2000	3.16196	7	0.33200	125	2852	
35	28.6960	3.10842	3	0.36800	58	1122	
36	29.8422	2.99159	4	0.33100	78	1529	
37	30.3124	2.94625	5	0.28710	91	1405	
38	30.8439	2.89668	20	0.25660	380	5651	
39	32.7000	2.73637	4	0.15760	69	677	
40	33.1078	2.70359	4	0.44220	84	1676	
41	34.7800	2.57734	3	0.40000	66	1449	
42	35.0200	2.56022	5	0.31200	102	1556	
43	35.6153	2.51878	12	0.22130	238	3506	
44	36.2800	2.47414	3	0.16340	63	942	

peak no.	2Theta (deg)	d (A)	I/I1	FWHM (deg)	Intensity (Counts)	Integrated Int (Counts)
45	36.4400	2.46365	6	0.22000	120	878
46	36.8200	2.43909	4	0.56440	68	1935
47	39.3612	2.28727	4	0.38250	67	1467
48	39.7274	2.26703	3	0.15660	61	525
49	40.4002	2.23081	3	0.30450	62	1034
50	44.2000	2.04745	7	0.27500	140	2204
51	44.4600	2.03608	5	0.18660	104	1073
52	44.9556	2.01478	6	0.26480	116	1619
53	45.3000	2.00026	3	0.25500	64	1153
54	46.4291	1.95421	6	0.25380	113	1805
55	48.4283	1.87810	8	0.26330	150	2378
56	50.0200	1.82200	3	0.10800	58	454
57	50.2600	1.81386	4	0.20920	77	1105
58	50.8358	1.79466	8	0.23830	144	2192
59	53.9400	1.69848	4	0.27700	76	1412
60	54.1200	1.69325	3	0.19420	62	921
61	57.6509	1.59766	4	0.32940	76	1606
62	59.7590	1.54624	4	0.31400	78	1765



File Name : Standard\Ahmad UNDIP 4  
 Sample Name : Zeolit AZ  
 Date & Time : 03-13-03 13:36:53  
 Condition  
 X-ray Tube : Cu(1.54060 A) Voltage : 40.0 kV Current : 30.0 mA  
 Scan Range : 5.0000 <-> 60.0000 deg Step Size : 0.0200 deg  
 Count Time : 0.24 sec Slit DS : 1.00 deg SS : 1.00 deg RS : 0.30 mm  
 Comment : Zeolit AZ



## Lampiran 5

### 5.1 Hasil Analisis Luas Permukaan Zeolit Alam

Quantachrome Corporation  
NOVA Data Analysis Package Ver. 2.00  
File Name = f.dat

User ID	=	User Setup	= 3
Sample ID	= F	Sample Cell Number	= 2
Sample Weight	= 0.1453 g	Sample Volume	= 0.1553 cc
Sample Density	= 1.0000 g/cc		
Po Type	= User	Po	= 749.71 mm Hg
Adsorbate	= N2	Bath Temperature	= 77.40 deg K
Adsorption Tolerance	= 0.1000 mm Hg	Desorption Tolerance	= 0.0000 mm Hg
Adsorption Equil Time	= 60 sec	Desorption Equil Time	= 0 sec
Adsorption Dwell Time	= 180 sec	Desorption Dwell Time	= 0 sec
Analysis Start Time	= Wed Mar 12 13:09:23 2003	Analysis End Time	= Wed Mar 12 14:12:59 2003

Multi BET (Adsorption)		BET Transform (1/(W[Po/P - 1]))
P/Po		
0.094311		12.811575
0.146357		18.655964
0.198638		25.196825
0.249343		31.989679
0.296186		38.994054
Slope	=	129.512325
Intercept	=	0.019969
Correlation Coefficient	=	0.998589
BET C	=	6486.744331
Surface Area	=	3.905146 sq m
Specific Surface Area	=	26.885315 sq m/g

User ID	=	User Setup	= 3
Sample ID	= F	Sample Cell Number	= 2
Sample Weight	= 0.1453 g	Sample Volume	= 0.1553 cc
Sample Density	= 1.0000 g/cc		
Po Type	= User	Po	= 749.71 mm Hg
Adsorbate	= N2	Bath Temperature	= 77.40 deg K
Adsorption Tolerance	= 0.1000 mm Hg	Desorption Tolerance	= 0.0000 mm Hg
Adsorption Equil Time	= 60 sec	Desorption Equil Time	= 0 sec
Adsorption Dwell Time	= 180 sec	Desorption Dwell Time	= 0 sec
Analysis Start Time	= Wed Mar 12 13:09:23 2003	Analysis End Time	= Wed Mar 12 14:12:59 2003

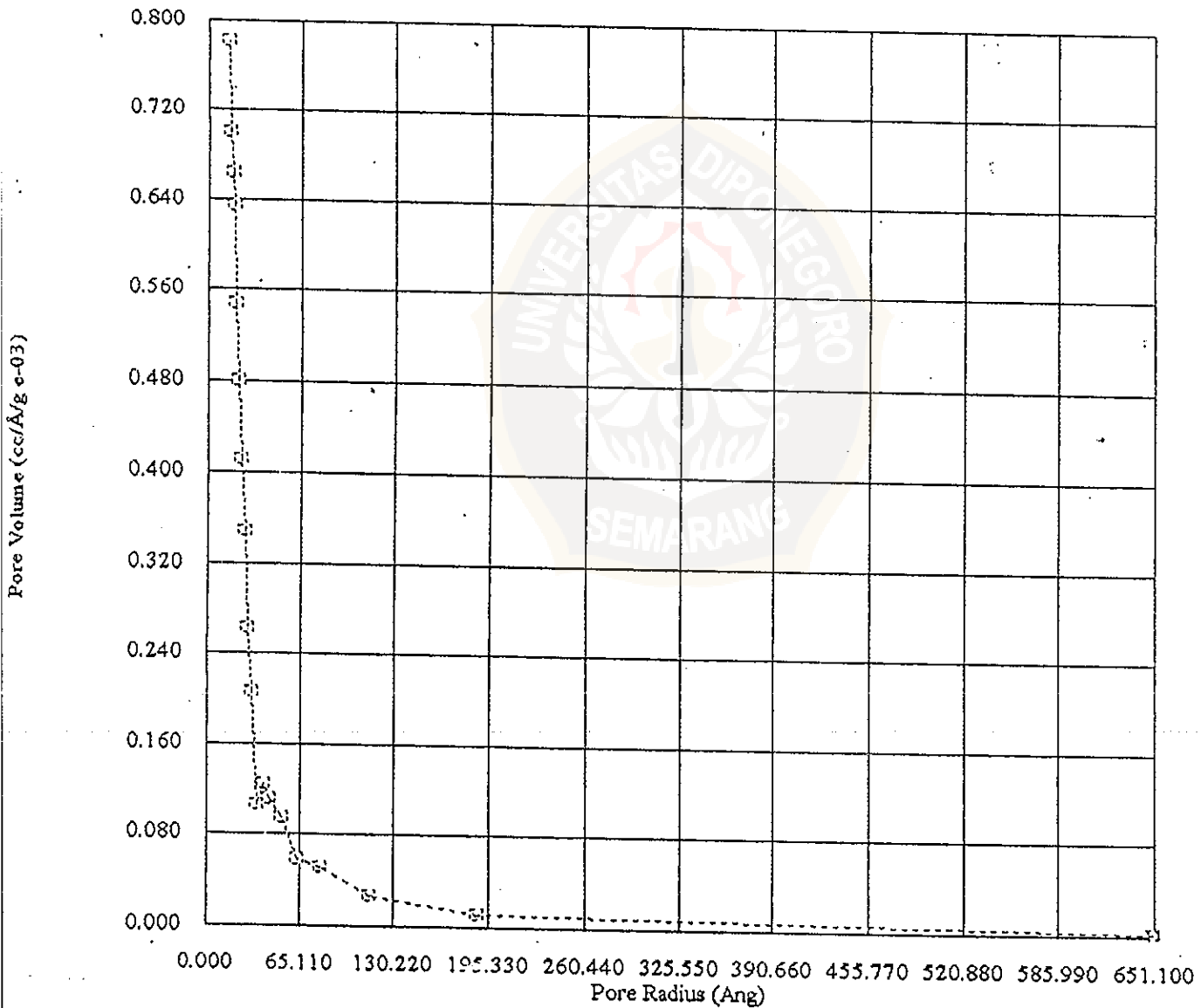
Pore Radius (Ang)	DVR (Adsorption)	
	Pore Area (sq m/Å/g e-03)	Pore Volume (cc/Å/g e-03)
651.097579	0.041957	0.001366
188.122280	1.112502	0.010464
113.332775	4.612666	0.026138
79.405124	12.580726	0.049949
62.830737	18.447173	0.057952
52.796817	35.757195	0.094393
44.067449	49.958148	0.110076
39.452501	62.854089	0.123988
35.511087	59.308570	0.105306
31.664749	129.547408	0.205104
28.550869	183.648251	0.262166
25.996813	267.521201	0.347735
23.812357	345.170081	0.410966
21.860492	438.770225	0.479587
19.965333	547.946974	0.546997
18.563840	683.472891	0.634394
17.480726	758.114762	0.662620
16.290898	858.456911	0.699252
15.187413	1028.976827	0.781375

Total Pore Volume is 24.514343 e-03 cc/g for all pores less than 1031.887345 Angstrom.

Average pore radius is 18.236232 Angstrom.

User ID	=	User Setup	= 3
Sample ID	= F	Sample Cell Number	= 2
Sample Weight	= 0.1453 g	Sample Volume	= 0.1553 cc
Sample Density	= 1.0000 g/cc		
Po Type	= User	Po	= 749.71 mm Hg
Adsorbate	= N2	Bath Temperature	= 77.40 deg K
Adsorption Tolerance	= 0.1000 mm Hg	Desorption Tolerance	= 0.0000 mm Hg
Adsorption Equil Time	= 60 sec	Desorption Equil Time	= 0 sec
Adsorption Dwell Time	= 180 sec	Desorption Dwell Time	= 0 sec
Analysis Start Time	= Wed Mar 12 13:09:23 2003	Analysis End Time	= Wed Mar 12 14:12:59 2003

DVR (Adsorption)



## 5.2 Hasil Analisis Luas Permukaan Zeolit Terdealuminasi

Quantachrome Corporation  
NOVA Data Analysis Package Ver. 2.00  
File Name = e.dat

User ID	=	User Setup	= 3
Sample ID	= E	Sample Cell Number	= 4
Sample Weight	= 0.1815 g	Sample Volume	= 0.1915 cc
Sample Density	= 1.0000 g/cc		
Po Type	= User	Po	= 749.91 mm Hg
Adsorbate	= N2	Bath Temperature	= 77.40 deg K
Adsorption Tolerance	= 0.1000 mm Hg	Desorption Tolerance	= 0.0000 mm Hg
Adsorption Equil Time	= 60 sec	Desorption Equil Time	= 0 sec
Adsorption Dwell Time	= 180 sec	Desorption Dwell Time	= 0 sec
Analysis Start Time	= Mon Mar 17 13:05:51 2003	Analysis End Time	= Mon Mar 17 14:08:28 2003

P/Po	Multi BET (Adsorption)	BET Transform (1/{W[Po/P - 1]})
0.091491		26.531117
0.149089		39.091168
0.201053		50.652880
0.251459		62.583878
0.301605		75.167714
Slope	=	230.914254
Intercept	=	4.867422
Correlation Coefficient	=	0.999557
BET C	=	48.440774
Surface Area	=	2.680240 sq m
Specific Surface Area	=	14.770090 sq m/g

Quantachrome Corporation  
NOVA Data Analysis Package Ver. 2.00  
File Name = e.dat

User ID	=	User Setup	= 3
Sample ID	= E	Sample Cell Number	= 4
Sample Weight	= 0.1815 g	Sample Volume	= 0.1915 cc
Sample Density	= 1.0000 g/cc		
Po Type	= User	Po	= 749.91 mm Hg
Adsorbate	= N2	Bath Temperature	= 77.40 deg K
Adsorption Tolerance	= 0.1000 mm Hg	Desorption Tolerance	= 0.0000 mm Hg
Adsorption Equil Time	= 60 sec	Desorption Equil Time	= 0 sec
Adsorption Dwell Time	= 180 sec	Desorption Dwell Time	= 0 sec
Analysis Start Time	= Mon Mar 17 13:05:51 2003	Analysis End Time	= Mon Mar 17 14:08:28 2003

Pore Radius (Ang)	DVR (Adsorption)	
	Pore Area (sq m/Å/g e-03)	Pore Volume (cc/Å/g e-03)
395.569675	0.029362	0.000581
181.325667	0.344075	0.003119
107.346890	1.267154	0.006801
81.491960	3.678489	0.014988
63.333155	6.352627	0.020117
52.920259	11.193578	0.029618
44.064798	21.470417	0.047304
38.582034	32.882554	0.063434
34.956286	43.066851	0.075273
31.784903	57.217488	0.090933
28.114071	81.984143	0.115245
25.645931	95.120825	0.121973
23.522736	140.268956	0.164975
21.603088	6.310209	0.006816
20.030398	22.150178	0.022184
18.599271	410.118451	0.381395
17.312448	530.839103	0.459506
16.115710	668.203039	0.538428
15.036253	759.004765	0.570629

Total Pore Volume is 11.098458 e-03 cc/g for  
all pores less than 525.062313 Angstrom.

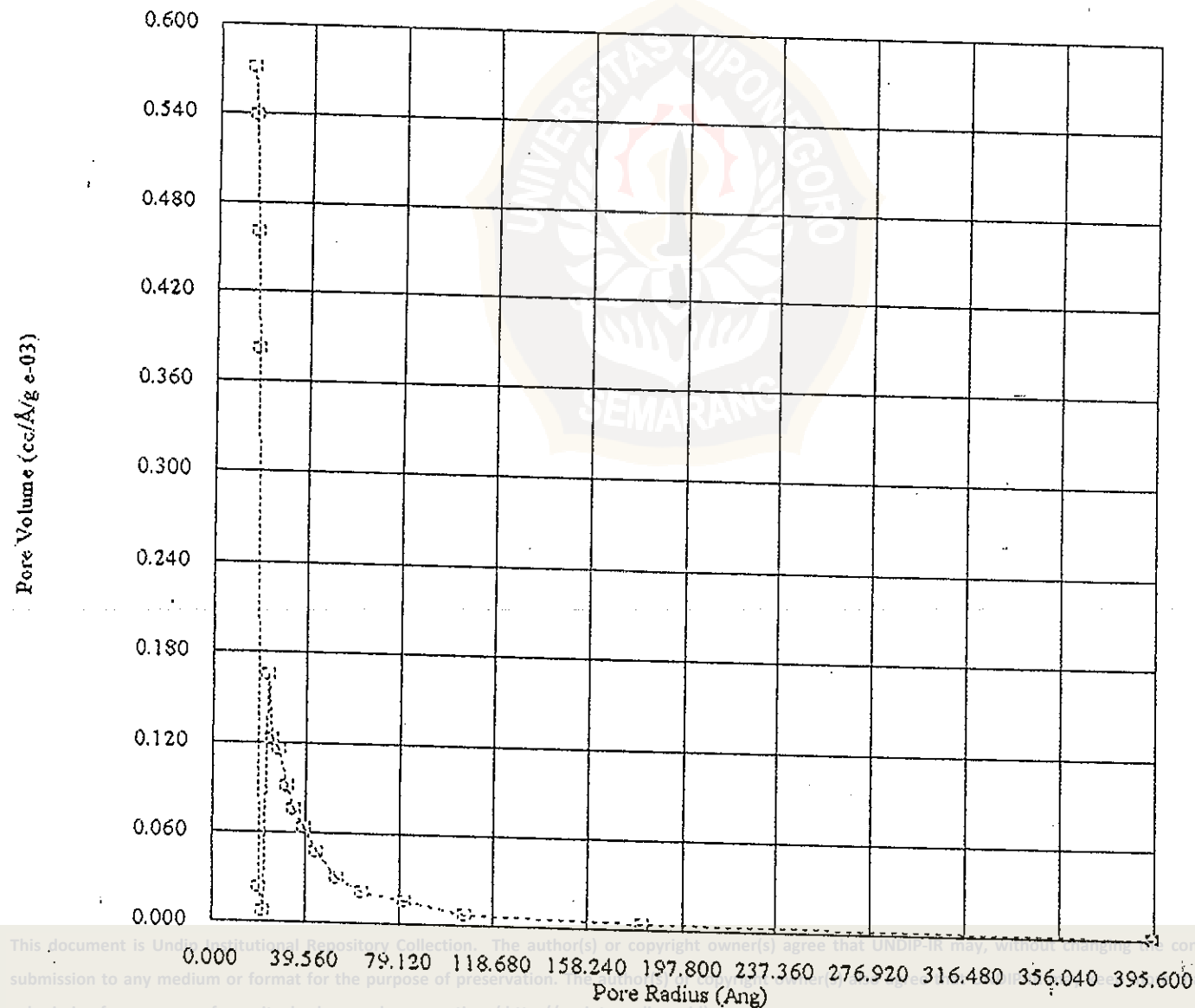
Average pore radius is 15.028287 Angstrom.



Quantachrome Corporation  
NOVA Data Analysis Package Ver. 2.00  
File Name = e.dat

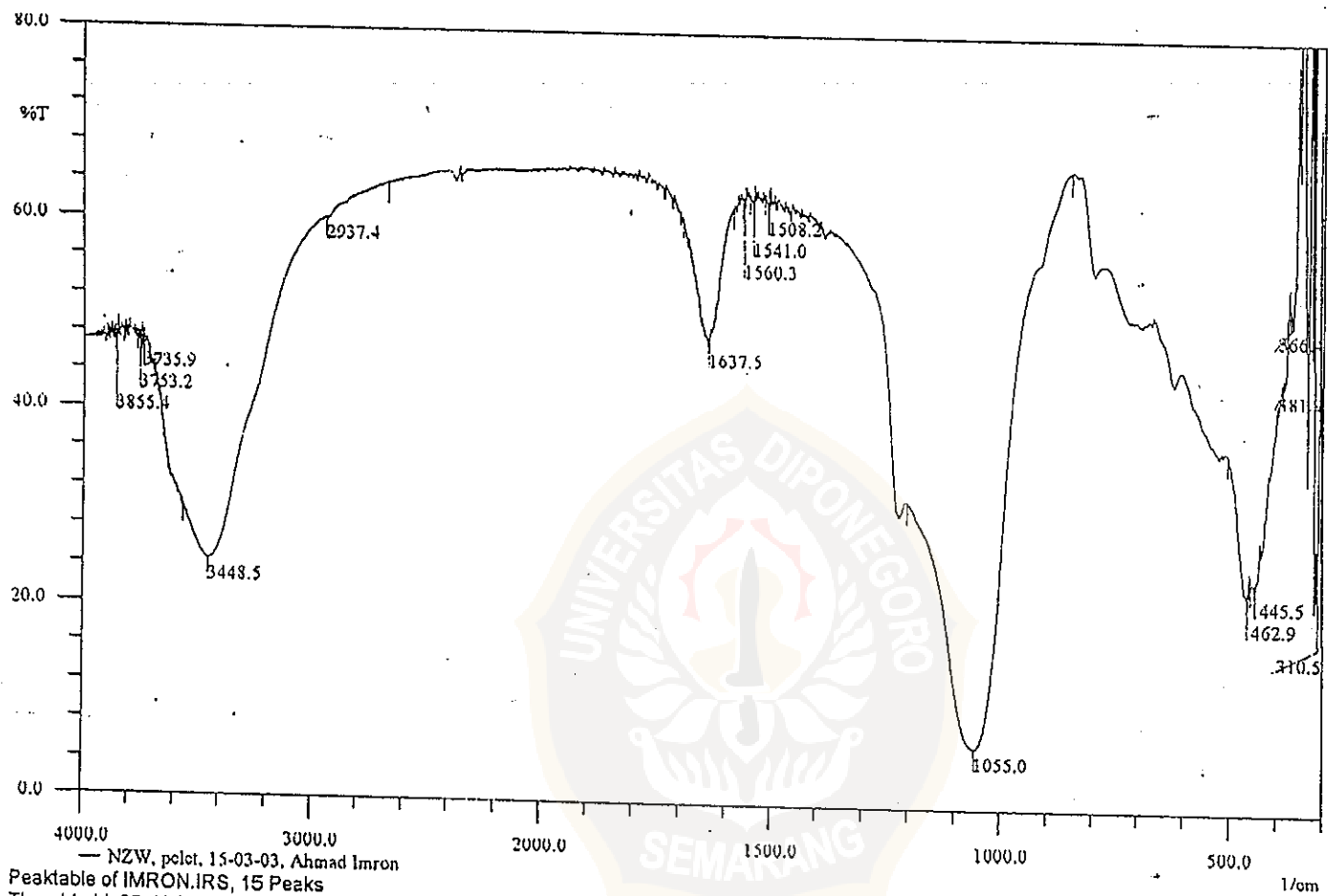
User ID	=	User Setup	= 3
Sample ID	= E	Sample Cell Number	= 4
Sample Weight	= 0.1815 g	Sample Volume	= 0.1915 cc
Sample Density	= 1.0000 g/cc		
Po Type	= User	Po	= 749.91 mm Hg
Adsorbate	= N2	Bath Temperature	= 77.40 deg K
Adsorption Tolerance	= 0.1000 mm Hg	Desorption Tolerance	= 0.0000 mm Hg
Adsorption Equil Time	= 60 sec	Desorption Equil Time	= 0 sec
Adsorption Dwell Time	= 180 sec	Desorption Dwell Time	= 0 sec
Analysis Start Time	= Mon Mar 17 13:05:51 2003	Analysis End Time	= Mon Mar 17 14:08:28 2003

## DVR (Adsorption)



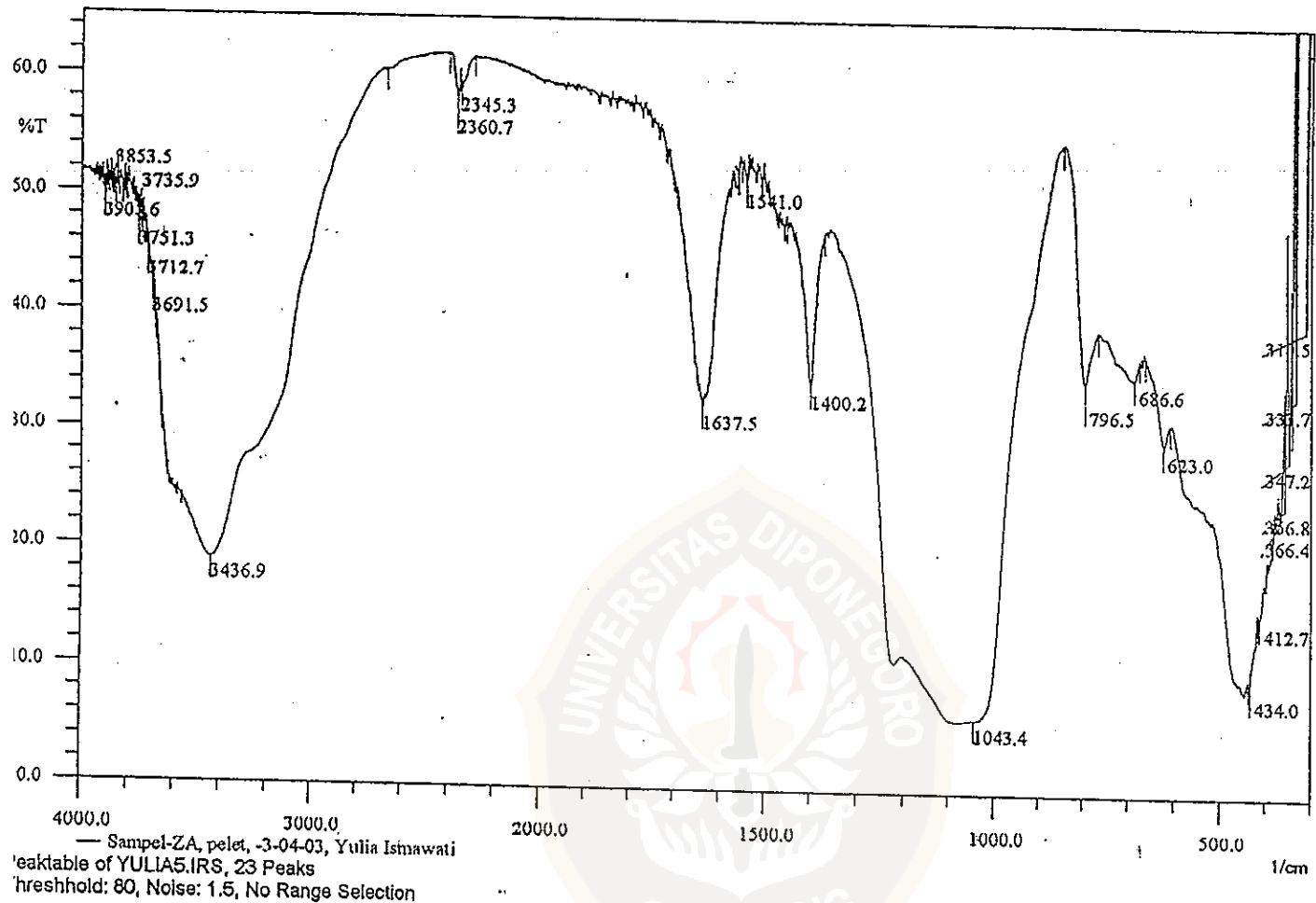
## Lampiran 6

## 6.1 Hasil Analisis FTIR Zeolit Alam



Nr.	Pos. (1/cm)	Inten. (%T)
1	310.5	17.486
2	366.4	50.697
3	381.9	44.467
4	445.5	23.192
5	462.9	22.698
6	1055.0	6.500
7	1508.2	61.475
8	1541.0	62.354
9	1560.3	61.076
10	1637.5	47.591
11	2937.4	60.077
12	3448.5	24.438
13	3735.9	46.273
14	3753.2	46.307
15	3855.4	46.197

## 6.2 Hasil Analisis FTIR Zeolit Terdealuminasi



Ir.	Pos. (1/cm)	Inten. (%T)
	310.5	39.696
	333.7	33.739
	347.2	28.382
	356.8	24.496
	366.4	23.472
	412.7	15.246
	434.0	9.120
	623.0	29.535
	686.6	35.257
	796.5	34.915
1	1043.4	6.292
2	1400.2	34.284
3	1541.0	51.292
4	1637.5	32.385
5	2345.3	58.824
6	2360.7	58.285
7	3436.9	18.951
8	3691.5	41.464
9	3712.7	44.628
0	3735.9	46.410
1	3751.3	47.055
2	3853.5	48.368
3	3905.6	49.498