2.3. Perhitungan Peak to Compton Ratio (P/C)

$$P/C = \frac{cacah\ pada\ puncak\ fotolistrik}{cacah\ rerata\ daerah\ yang\ diukur}$$

untuk daerah *edge* diambil dari energi 459 – 472 keV

untuk daerah *valley* diambil dari energi 358 - 382 keV

untuk daerah *backscatter* diambil dari energi 180 – 190 keV

Modul ORTEC

	Normal			Anti Compton		
daerah	Peak	Cacah total	P/C	Peak	Cacah total	P/C
Edge		33437	61,40		5496	363,92
Valley	31107	41698	92,50	30305	9548	393,65
backscatter		24897	64,98		10868	145

Modul NC-26R

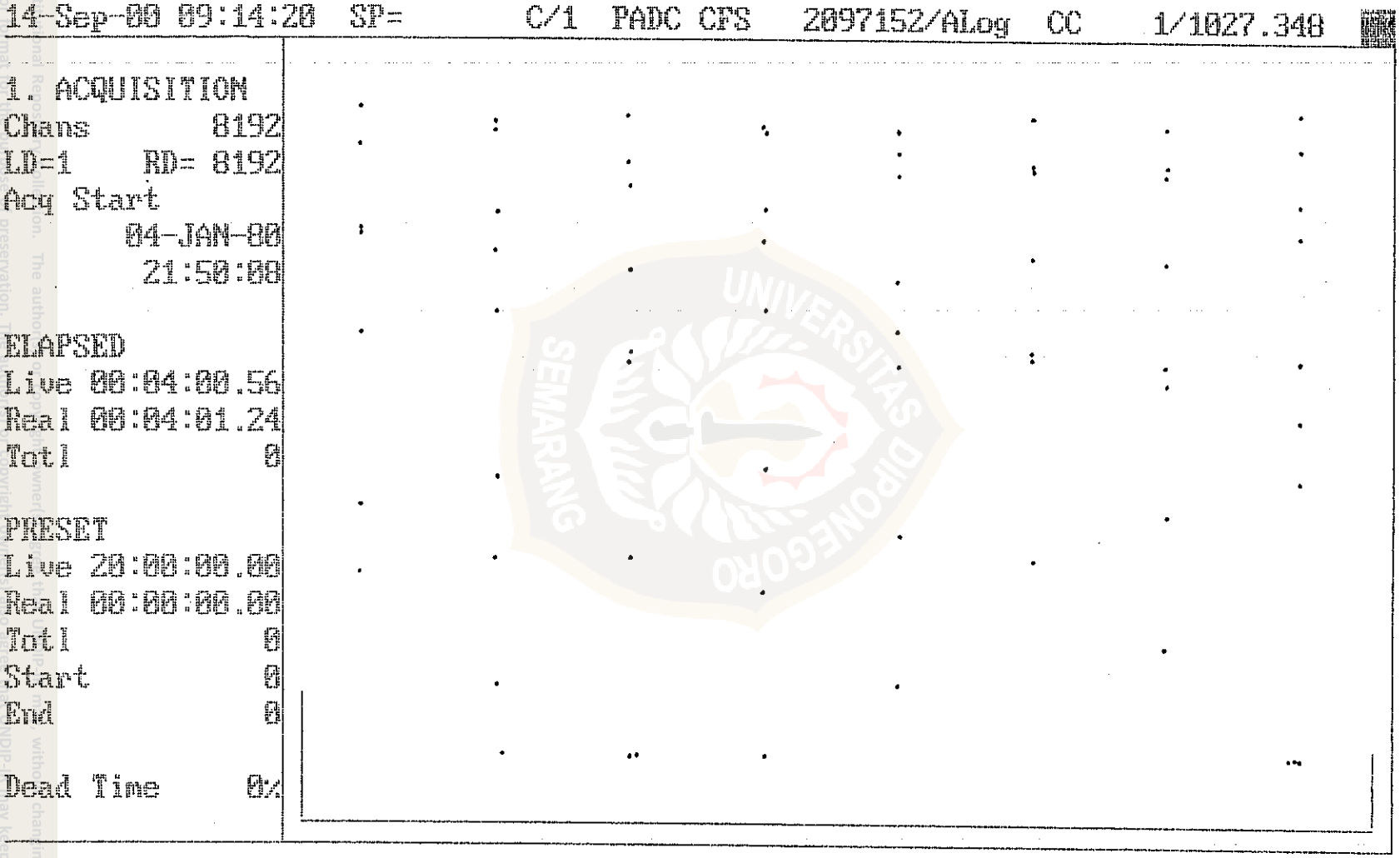
	Normal			Anti Compton		
daerah	Peak	Cacah total	P/C	Peak	Cacah total	P/C
Edge		31364	36,63		5629	162,84
Valley	17148	38583	55,11	13740	8465	202,05
backscatter		22284	39,24		7735	90,22

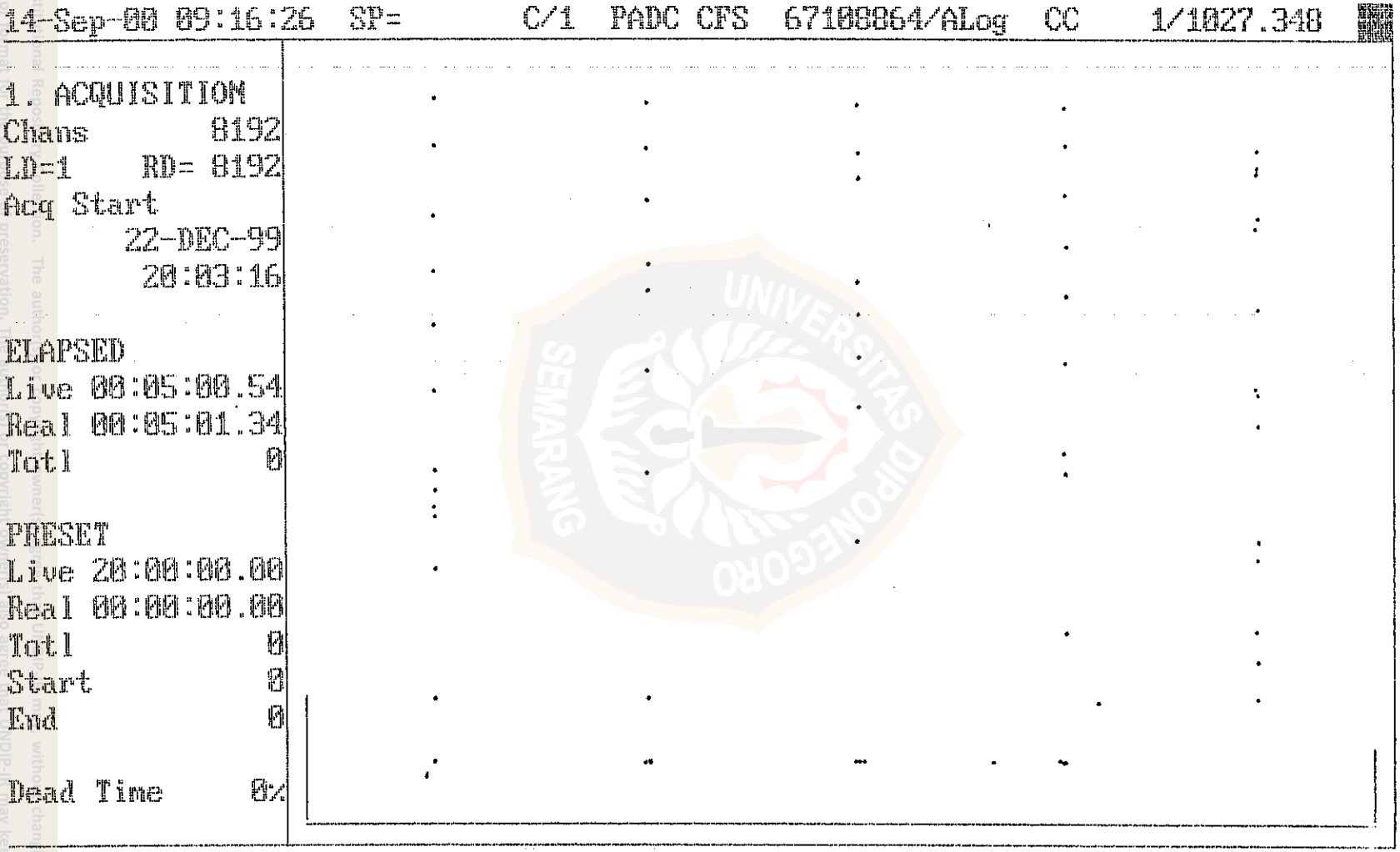
Faktor Supressi (SF) = P/C (Anti Compton) : P/C (normal)

Modul	ORTEC	NC-26R
Edge	5,92	4,45
Valley	4,26	3,67
backscatter	2,23	2,30

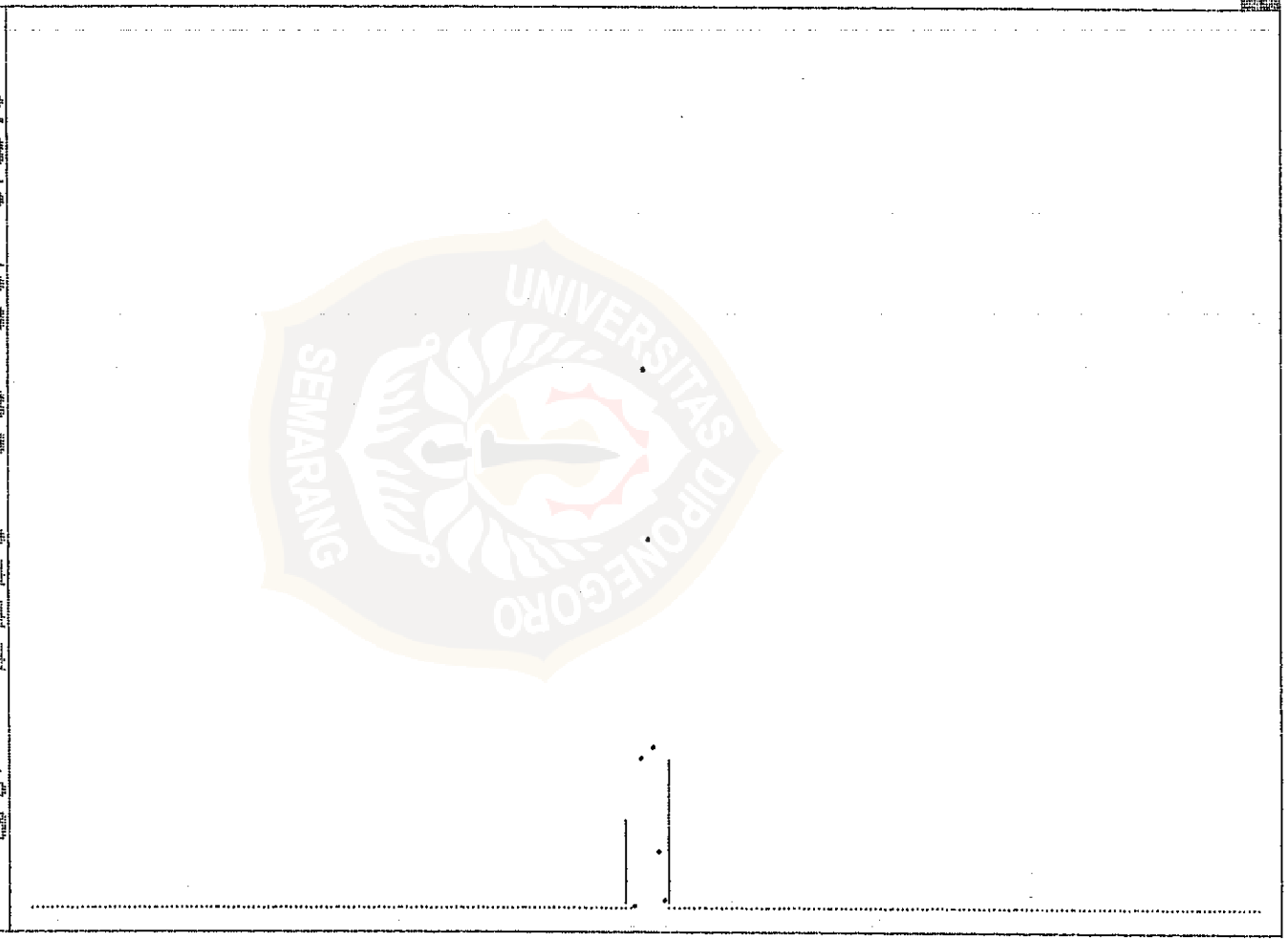
LAMPIRAN A

Spektrum Detektor NaI(T*l*)


14-Sep-00 09:14:20 SP= C/1 PADC CFS 2097152/ALog CC 1/1027.340
1. ACQUISITION
Chans 8192
LD=1 RD= 8192
Acq Start
04-JAN-80
21:50:00
ELAPSED
Live 00:04:00.56
Real 00:04:01.24
Totl 0
PRESET
Live 20:00:00.00
Real 00:00:00.00
Totl 0
Start 0
End 0
Dead Time 0%



04-Sep-00 20:45:09 SP= C/1 PADC CFS 1024/ALin CC 465/ 662.852



4. PEAK DATA

Chans	8192
LD=332	RD= 588
LM=456	RM= 465
Area	1515
%Err	2.569
Cent Ch	460.578
	662.098 keV
FWHM	0.366
FWTM	0.804
FWTM/FWHM	2.194
Gauss Rat	1.204

FWHM CAL

Zero	0.366
Slope	0.000

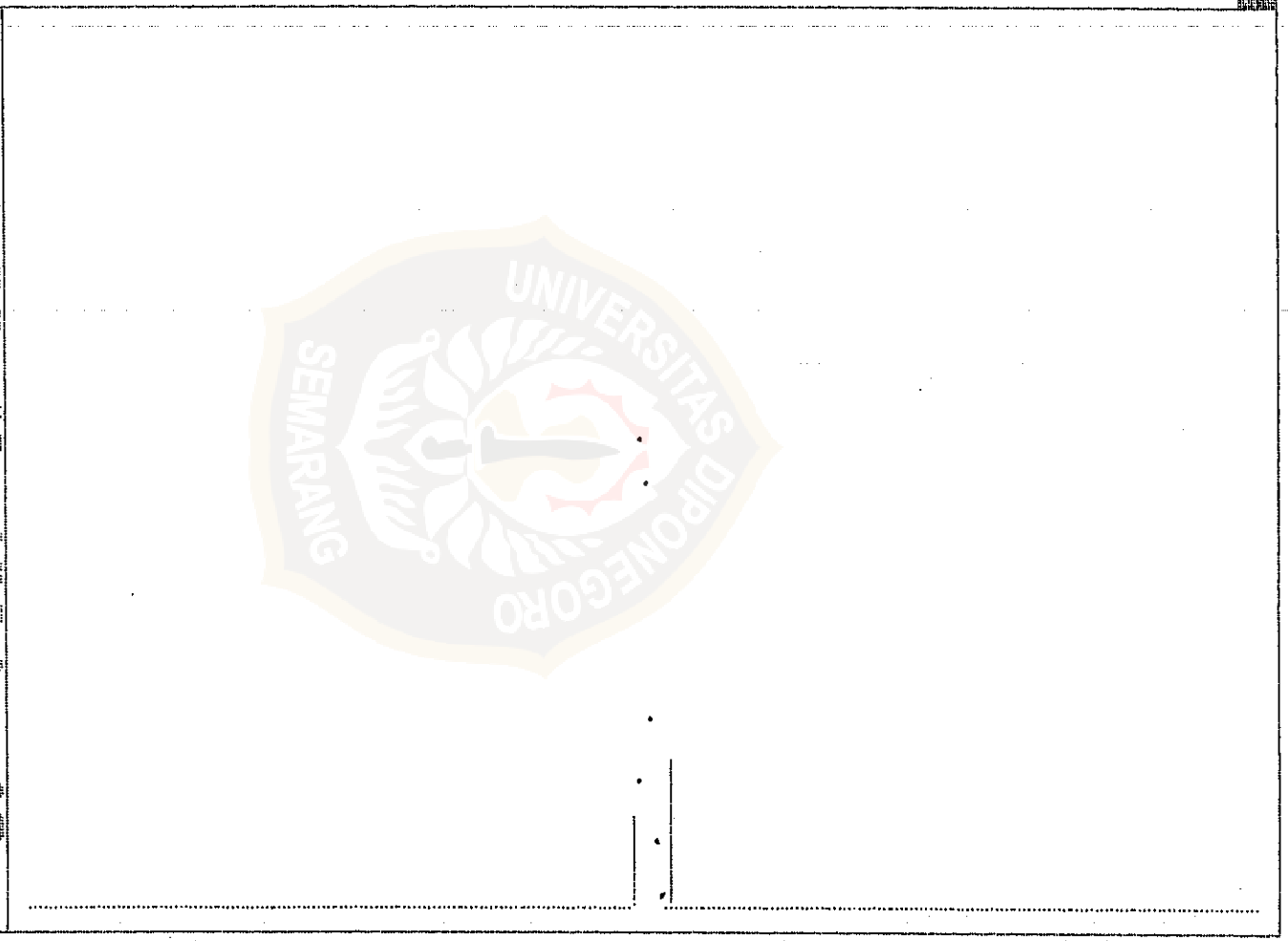
04-Sep-00 20:46:26 SP= C/1 PADC CFS 1024/ALin CC 1481/ 836.023

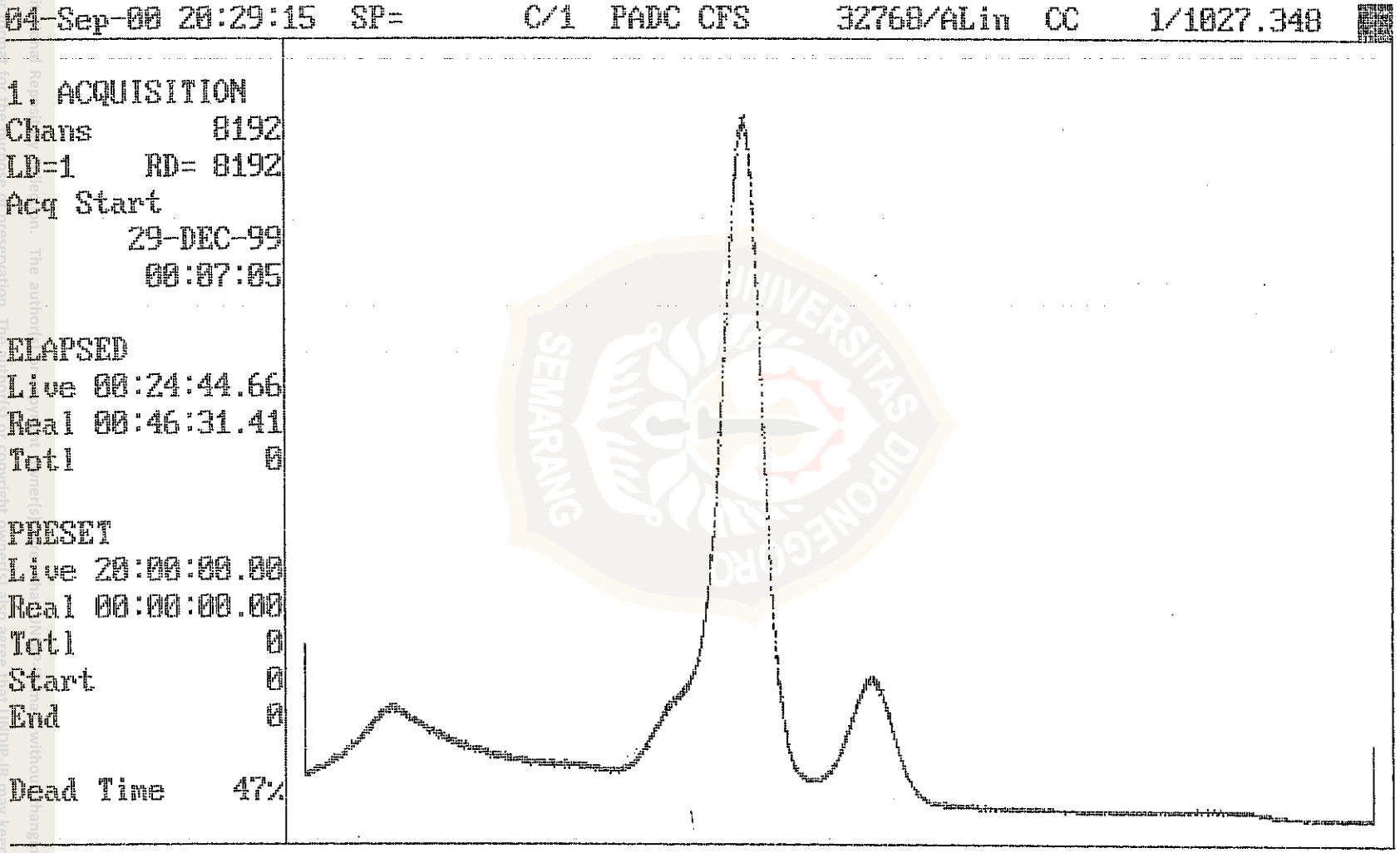
4. PEAK DATA

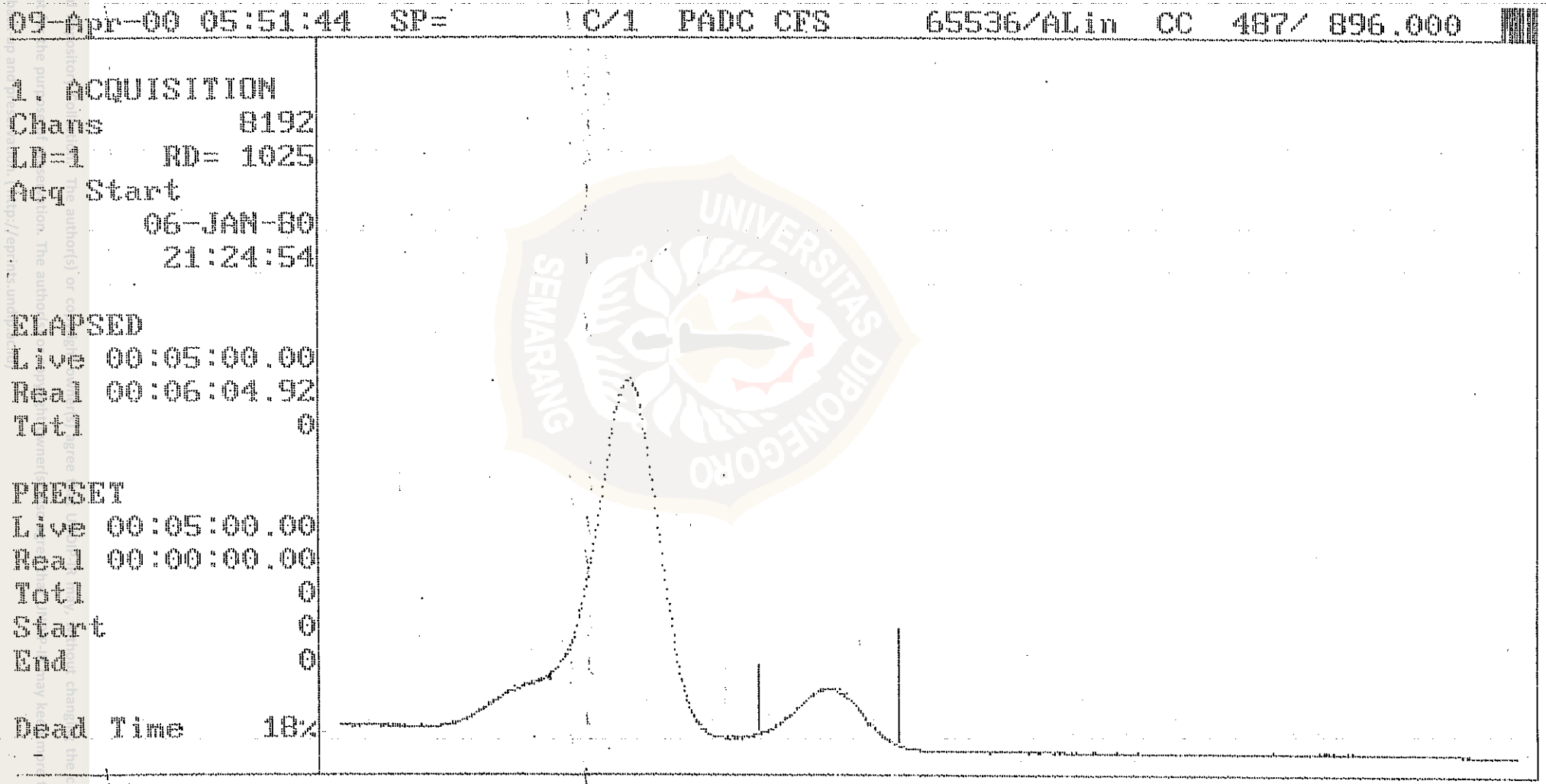
Chans	8192
LD=1347 RD=	1603
LM=1473 RM=	1481
Area	1513
%Err	2.593
Cent Ch	1475.724
	835.123 keV
FWHM	0.406
FWTM	0.848
FWTM/FWHM	2.089
Gauss Rat	1.146

FWHM CAL

Zero	0.366
Slope	0.000




04-Sep-00 20:29:15 SP= C/1 PADC CFS 32768/ALin CC 1/1027.348
1. ACQUISITION
Chans 8192
LD=1 RD= 8192
Acq Start
29-DEC-99
00:07:05
ELAPSED
Live 00:24:44.66
Real 00:46:31.41
Totl 0
PRESET
Live 20:00:00.00
Real 00:00:00.00
Totl 0
Start 0
End 0
Dead Time 47%


09-Apr-00 05:51:44 SP= !C/1 PADC CFS 65536/ALin CC 487/ 896.000
1. ACQUISITION
Chans 8192
LD=1 RD= 1025
Acq Start
06-JAN-80
21:24:54
ELAPSED
Live 00:05:00.00
Real 00:06:04.92
Totl 0
PRESET
Live 00:05:00.00
Real 00:00:00.00
Totl 0
Start 0
End 0
Dead Time 18%

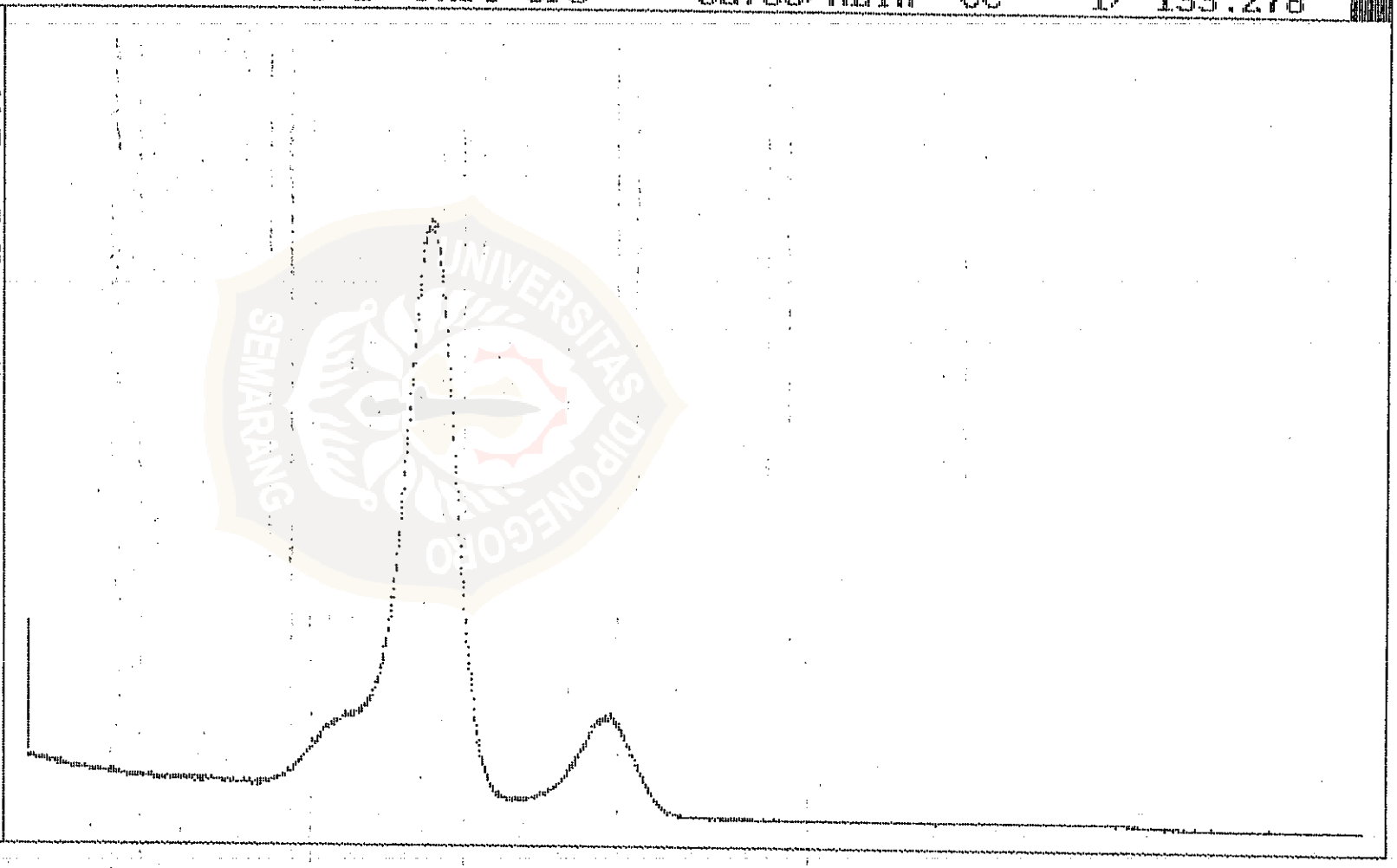
09-Apr-00 11:06:40 SP= C/1 PADC CFS 32768/ALin CC 1/ 133.278

1. ACQUISITION
Chans 8192
LD=1 RD= 2049
Acq Start
06-JAN-80
22:46:48

ELAPSED
Live 00:05:00.00
Real 00:06:30.40
Totl 0

PRESET
Live 00:05:00.00
Real 00:00:00.00
Totl 0
Start 0
End 0

Dead Time 23%



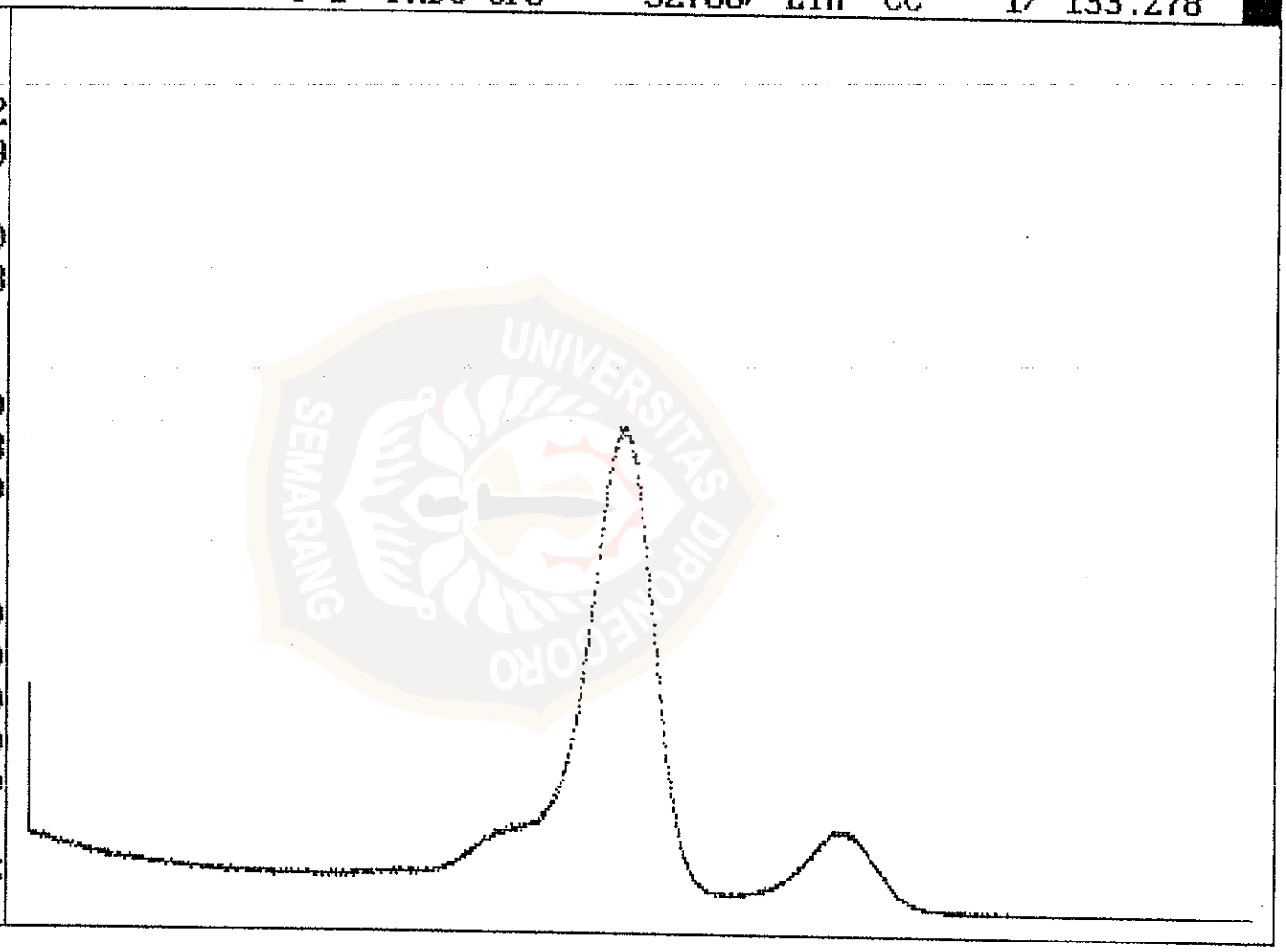
11-Apr-00 10:17:47 SP= C/1 PADC CFS 32768/ Lin CC 1/ 133.278

1. ACQUISITION
Chans 8192
LD=1 RD= 2049
Acq Start
06-JAN-80
23:23:53

ELAPSED
Live 00:05:00.00
Real 00:06:53.23
Totl 0

PRESET
Live 00:05:00.00
Real 00:00:00.00
Totl 0
Start 0
End 0

Dead Time 27%

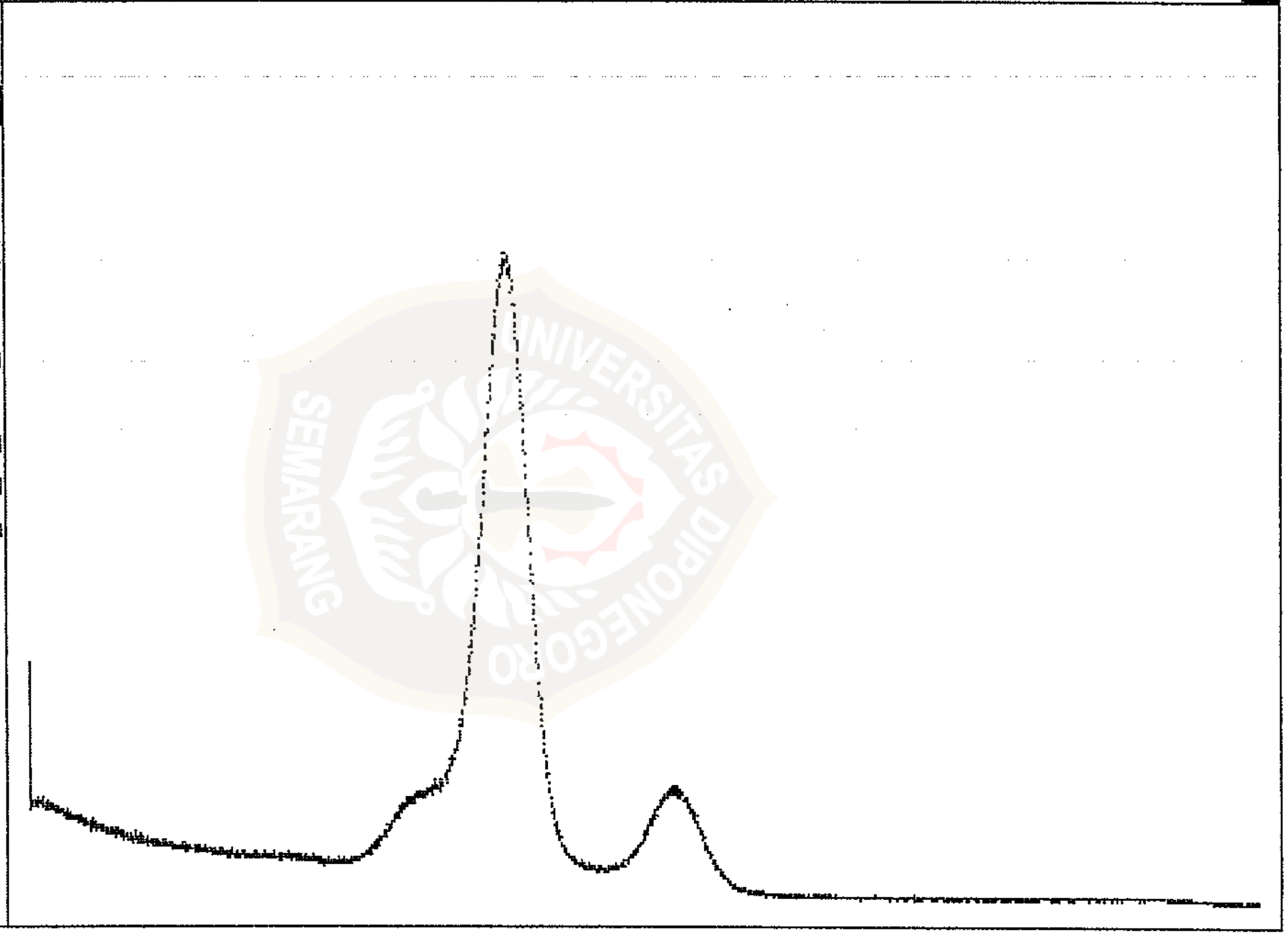


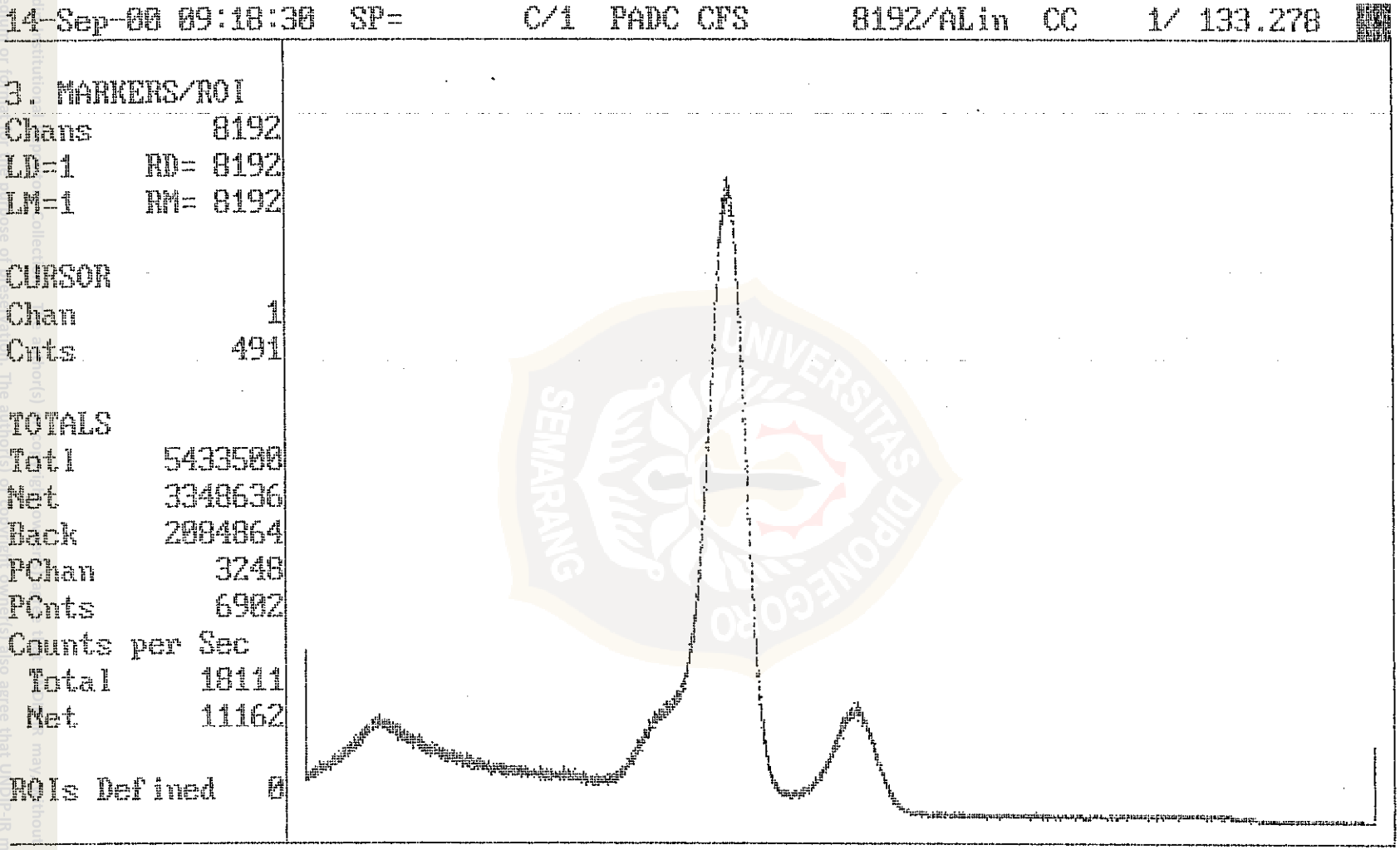
11-Apr-00 14:09:27 SP= C/1 PADC CFS 16384/ALin CC 1/ 133.278

2. DISPLAY

SP= C/1
Chans 8192
LD=1 RD= 4097
LEner 133.278
REner 1154.327
CFS 16384/ALi
Base 0
Energy Cal (keV)
Zero 133.029
Slope 0.249
Quad 0.000E+000

OV= /
Chans
LD= RD=
LEner
REner
CFS
Base




14-Sep-00 09:18:30 SP= C/1 PADC CFS 8192/ALin CC 1/ 133.278
3. MARKERS/ROI
Chans 8192
LD=1 RD= 8192
LM=1 RM= 8192
CURSOR
Chan 1
Cnts 491
TOTALS
Totl 5433500
Met 3348636
Back 2084864
PChan 3248
PCnts 6982
Counts per Sec
Total 18111
Met 11162
ROIs Defined 0

14-Sep-00 09:20:03 SP= C/1 PADC CFS 8192/ALin CC 1/ 133.270

3. MARKERS/ROI

Chans		8192
LD=1	RD=	8192
LM=1	RM=	8192

CURSOR

Chan	1
Cnts	436

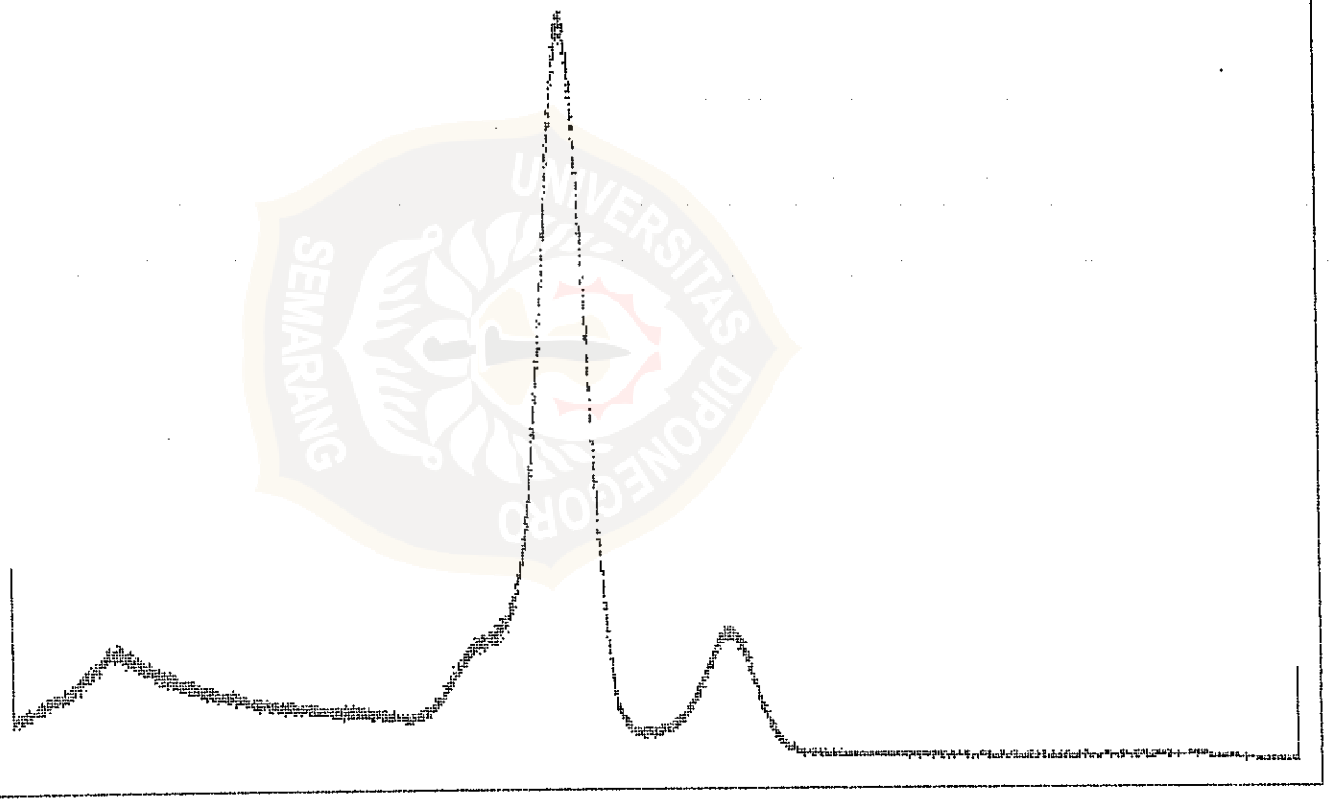
TOTALS

Totl	5446504
Net	3578728
Back	1867776
PChan	3559
PCnts	6689

Counts per Sec

Total	18155
Net	11929

ROIs Defined 0



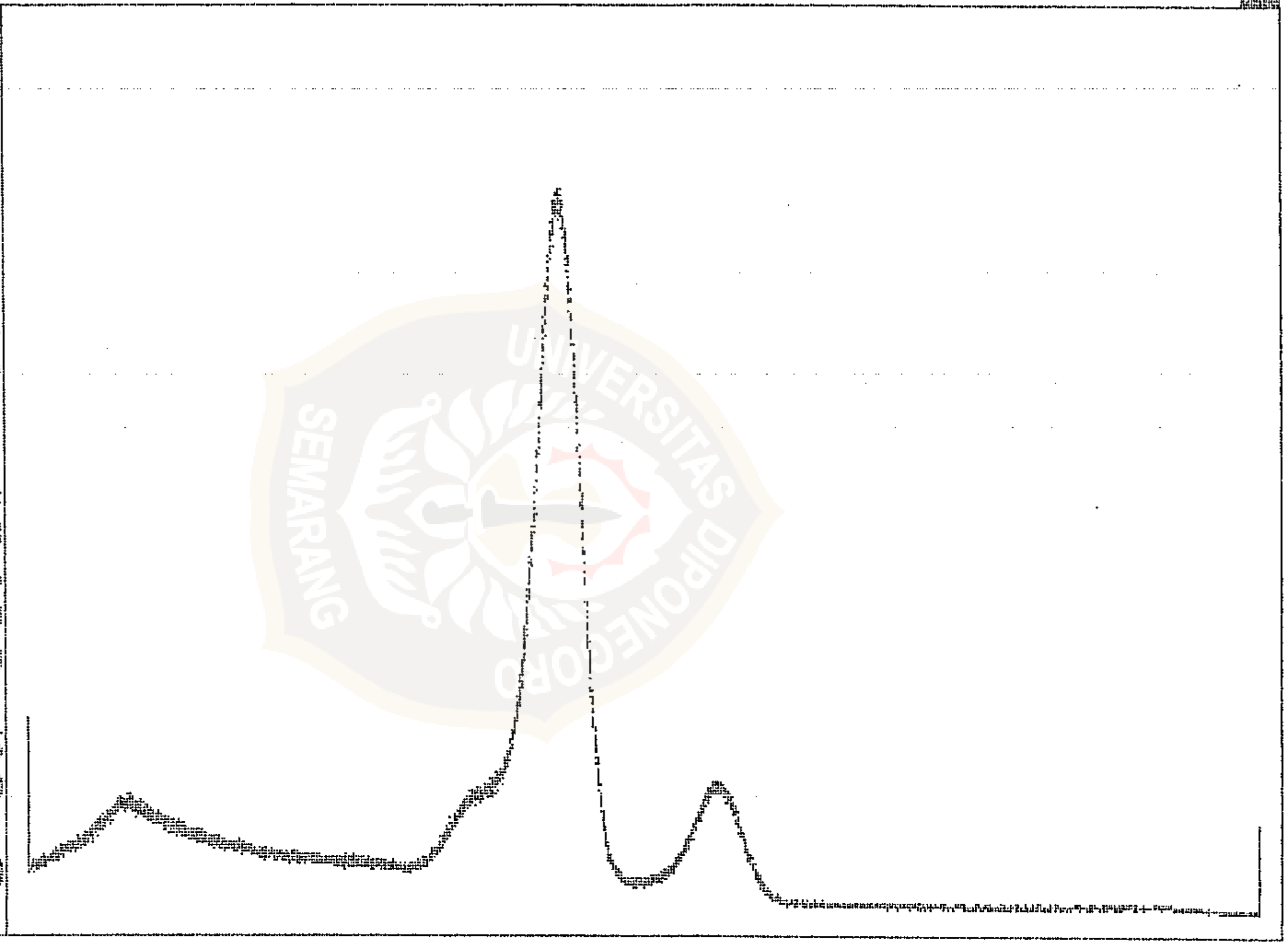
14-Sep-00 09:21:26 SP= C/1 PADC CFS 8192/ALin CC 1/ 133.278

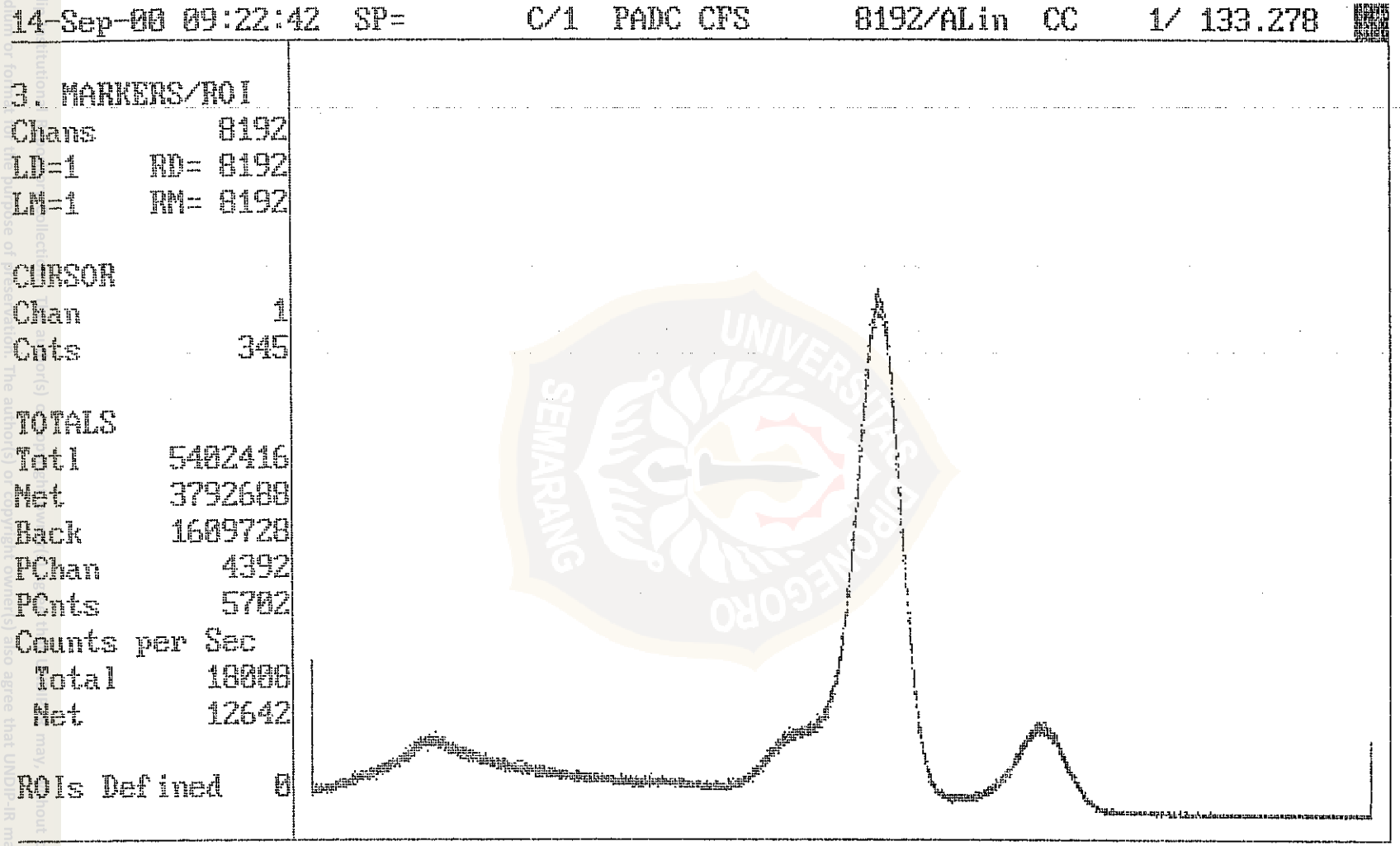
3. MARKERS/ROI
Chans 8192
LD=1 RD= 8192
LM=1 RM= 8192

CURSOR
Chan 1
Cnts 436

TOTALS
Totl 5446504
Net 3578728
Back 1867776
PChan 3559
PCnts 6689
Counts per Sec
Total 18155
Net 11929

ROIs Defined 0




14-Sep-00 09:22:42 SP= C/1 PADC CFS 8192/ALin CC 1/ 133.278
3. MARKERS/ROI
Chans 8192
LD=1 RD= 8192
LN=1 RM= 8192
CURSOR
Chan 1
Cnts 345
TOTALS
Totl 5402416
Net 3792688
Back 1609728
PChan 4392
PCnts 5702
Counts per Sec
Total 18008
Net 12642
ROIs Defined 0

14-Sep-00 09:23:59 SP= C/1 PADC CFS 8192/ALin CC 1/ 133.278

3. MARKERS/ROI

Chans		8192
LD=1	RD=	8192
LM=1	RM=	8192

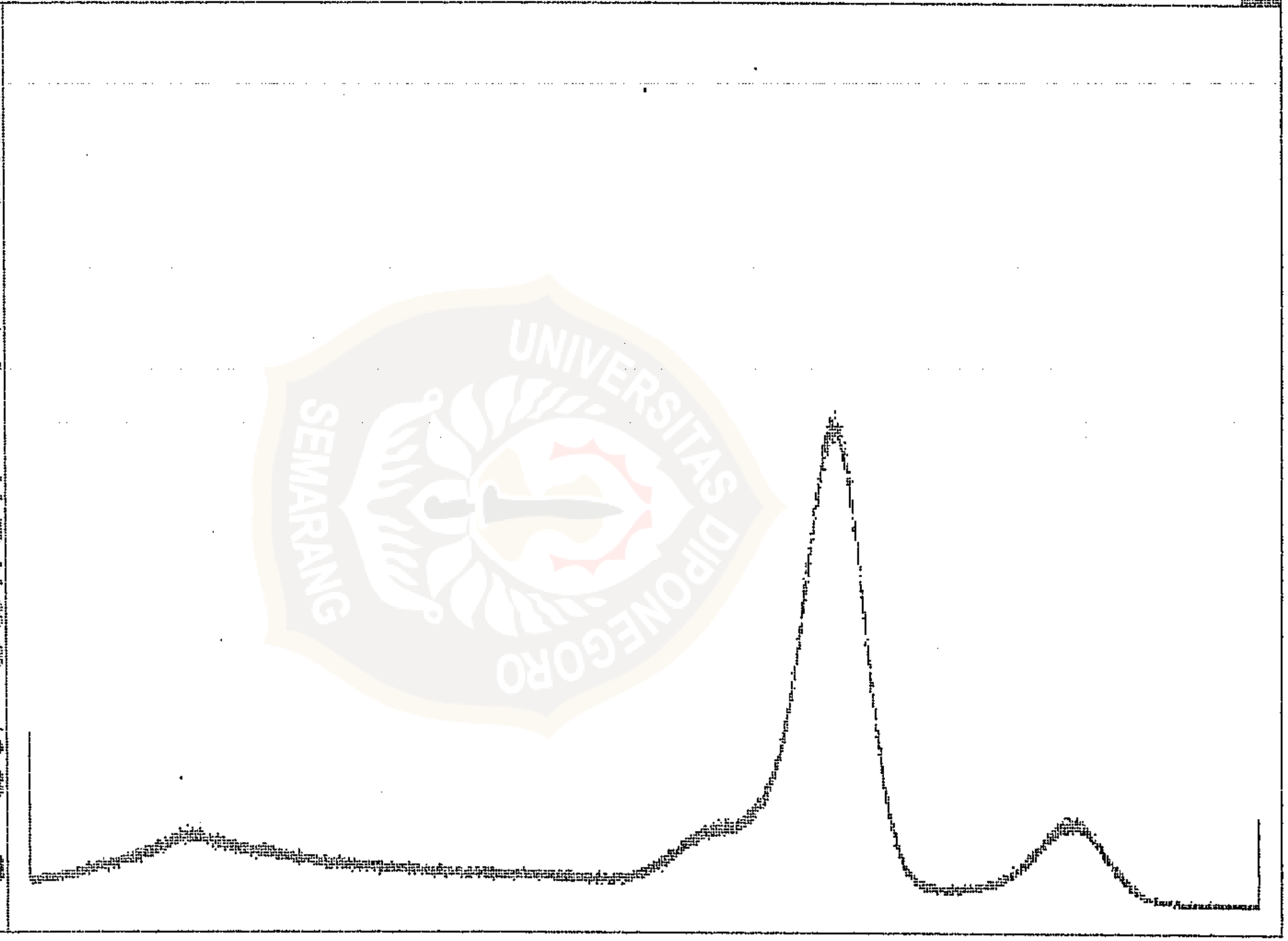
CURSOR

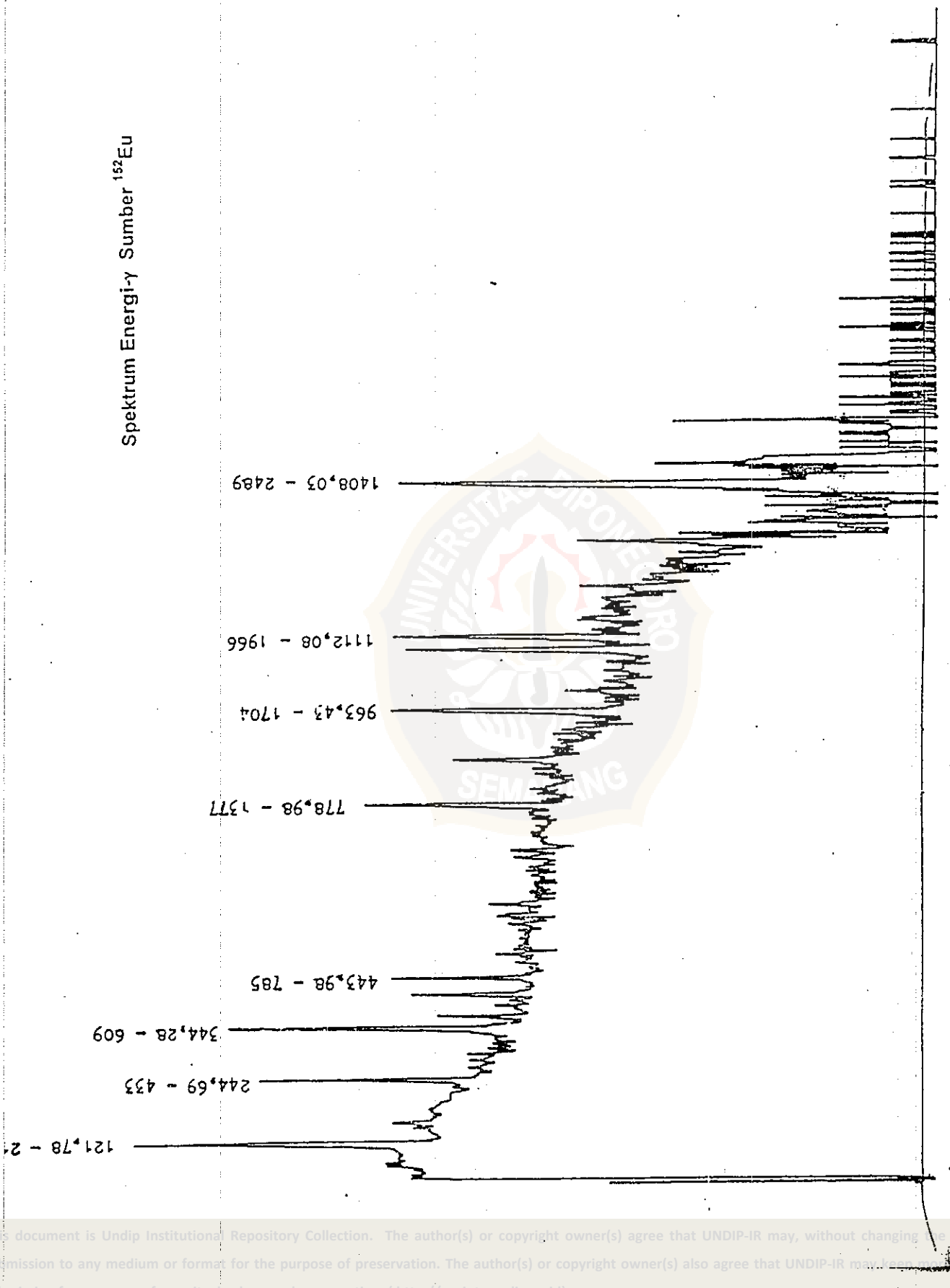
Chan	1
Cnts	266

TOTALS

Totl	5287512
Net	3968600
Back	1318912
PChan	5378
PCnts	4609
Counts per Sec	
Total	17625
Net	13228

ROIs Defined 0





LAMPIRAN B

Data Hasil Perhitungan

PERHITUNGAN SUMBER RADIASI Cs-137 (662 keV) BERDASARKAN KARAKTERISTIK ALAT

Perubahan 50 V

FWHM (keV)	Energi (keV)	R	K
57,850	662,085	8,737548804	6,794317950E+09

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	8,737548804	2,778151250	0,941389615	7,718124370	0,886214406	2,615322735
2	650	5,855703566	2,812913357	0,767579083	7,912481552	0,589177649	2,159133456
3	700	4,042552478	2,845098040	0,606655666	8,094582857	0,368031098	1,725994847
4	750	2,863119992	2,875061263	0,456839549	8,265977268	0,208702374	1,313441692
5	800	2,073461288	2,903089987	0,316695931	8,427931473	0,100296313	0,919396788
6	850	1,531268109	2,929418926	0,185051238	8,581495242	0,034243961	0,542092598
7	900	1,150623711	2,954242509	0,060933319	8,727548805	0,003712869	0,180011802
Jumlah	5250	26,25427795	20,097975333	3,335144402	57,728141567	2,190378670	9,455393918
Rata-rata	750	3,750611136	2,871139333	0,476449200	8,246877367	0,312911239	1,350770560
STDEV =	3,015782986E-07			log a =	14,832145866	a =	679431794987725
P . E =	4,219803474E-05			b	-5		

Perubahan 30 V

FWHM (keV)	Energi (keV)	R	K
52,197	662,074	7,883861925	6,130491033E+09

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	7,883861925	2,778151250	0,89673901	7,718124370	0,80414085	2,491276601
2	630	6,177212111	2,799340549	0,790792514	7,836307512	0,62535280	2,213697551
3	660	4,895257977	2,819543936	0,689775584	7,949828004	0,47579036	1,944852564
4	690	3,919672733	2,838849091	0,593249808	8,059064160	0,351945335	1,684146678
5	720	3,168347289	2,857332496	0,500832779	8,164348995	0,250833473	1,431045776
6	750	2,583383876	2,875061263	0,412188945	8,265977268	0,169899726	1,185068468
7	780	2,123353235	2,892094603	0,327022248	8,364211191	0,106943551	0,945779279
8	810	1,758207657	2,908485019	0,245070167	8,459285105	0,060059387	0,712782910
9	840	1,465881390	2,924279286	0,166098831	8,551409343	0,027588822	0,485719372
10	870	1,229982687	2,939519253	0,089898998	8,640773437	0,00808183	0,264259837
11	900	1,038204040	2,954242509	0,016282714	8,727548805	0,000265127	0,048103087
Jumlah	8250	36,243364919	31,586899256	4,727951599	90,736878190	2,880901257	13,406732121
Rata-rata	750	3,294851356	2,871536296	0,429813782	8,248807108	0,261900114	1,218793829
STDEV =	0,00000E+00			log a =	14,787495262	a =	613049103301985
P . E =	0,00000E+00			b	-5		

Perubahan 10 V

FWHM (keV)	Energi (keV)	R	K
55,502	662,002	8,383962586	6,519369307E+09

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	8,383962586	2,778151250	0,923449332	7,718124370	0,852758668	2,565481915
2	610	7,718917664	2,785329835	0,887556408	7,758062290	0,787756378	2,472137345
3	620	7,116183461	2,792391689	0,852247136	7,797451348	0,726325181	2,379807820
4	630	6,569054065	2,799340549	0,817502836	7,836307512	0,668310887	2,288468839
5	640	6,071635808	2,806179974	0,783305714	7,874646046	0,613567841	2,198096807
6	650	5,618738242	2,812913357	0,749638800	7,912481552	0,561958331	2,108668994
7	660	5,205781141	2,819543936	0,716485906	7,949828004	0,513352053	2,020163491
8	670	4,828714964	2,826074803	0,683831570	7,986698790	0,467625616	1,932559169
9	680	4,483952672	2,832508913	0,651661020	8,023106741	0,424662085	1,845835647
10	690	4,168311147	2,838849091	0,619960130	8,059064160	0,384350563	1,759973251
11	700	3,878960735	2,845098040	0,588715383	8,094582857	0,346585803	1,674952984
12	710	3,613381693	2,851258349	0,557913840	8,129674171	0,311267853	1,590756494
13	720	3,369326528	2,857332496	0,527543101	8,164348995	0,278301724	1,507366047
14	730	3,144787343	2,863322860	0,497591283	8,198617801	0,247597085	1,424764495
15	740	2,937967484	2,869231720	0,468046985	8,232490662	0,219067980	1,342935255
16	750	2,747256860	2,875061263	0,438899267	8,265977268	0,192632566	1,261862280
17	760	2,571210436	2,880813592	0,410137622	8,299086953	0,168212869	1,181530036
18	770	2,408529432	2,886490725	0,381751958	8,331828707	0,145734557	1,101923485
19	780	2,258044883	2,892094603	0,353732570	8,364211191	0,125126731	1,023028057
20	790	2,118703222	2,897627091	0,326070127	8,396242760	0,106321728	0,944829634
21	800	1,989553622	2,903089987	0,298755649	8,427931473	0,089254938	0,867314532
22	810	1,869736857	2,908485019	0,271780489	8,459285105	0,073864634	0,790469481
23	820	1,758475499	2,913813852	0,245136322	8,490311166	0,060091816	0,714281610
24	830	1,655065255	2,919078092	0,218815122	8,521016909	0,047880057	0,638738428
25	840	1,558867322	2,924279286	0,192809153	8,551409343	0,037175370	0,563827813
26	850	1,469301612	2,929418926	0,167110955	8,581495242	0,027926071	0,489537994
27	860	1,385840750	2,934498451	0,141713327	8,611281160	0,020082667	0,415857539
28	870	1,308004748	2,939519253	0,116609320	8,640773437	0,013597734	0,342775342
29	880	1,235356267	2,944482672	0,091792223	8,669978207	0,008425812	0,270280609
30	890	1,167496401	2,949390007	0,067255550	8,698901411	0,004523309	0,198362848
31	900	1,104060917	2,954242509	0,042993036	8,727548805	0,001848401	0,127011855
Jumlah	23250	105,7151796	89,029912191	14,09081213	255,772764437	8,526187308	40,043600095
Rata-rata	750	3,410167084	2,871932651	0,454542327	8,250734337	0,2750383	1,291729035

STDEV = 2,504471452E-07

P . E = 1,184919378E-06

DELTA = 261,8264641

log a = 14,814205583 a = 6,519369307E+14

b = -5

Perubahan 10 V

FWHM (keV)	Energi (keV)	R	K
55,502	662,002	8,383962586	6,519369307E+09

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	600	8,383962586	360000	70,290828646	5030,377551698
2	610	7,718917664	372100	59,581689908	4708,539775229
3	620	7,116183461	384400	50,640067048	4412,033745713
4	630	6,569054065	396900	43,152471308	4138,504060919
5	640	6,071635808	409600	36,864761383	3885,846917033
6	650	5,618738242	422500	31,570219437	3652,179857568
7	660	5,205781141	435600	27,100157293	3435,815553376
8	670	4,828714964	448900	23,316488200	3235,239025660
9	680	4,483952672	462400	20,105831564	3049,087816893
10	690	4,168311147	476100	17,374817822	2876,134691741
Jumlah	6450	60,165251751	4168500	379,997332610	38423,758995831
Rata-rata	645	6,016525175	416850	37,999733261	3842,375899583

STDEV =	1,757223269E-01		
P . E =	1,947107584E+00	a	35,94674426
DELTA =	82500	b	-0,046403440

Perubahan 10 V

FWHM (keV)	Energi (keV)	R	K
51,847	662,04	7,831399915	1,316223384E+10

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	700	7,831399917	490000	61,330824655	5481,979941691
2	710	7,295211018	504100	53,220103794	5179,599822617
3	720	6,802477595	518400	46,273701432	4897,783868456
4	730	6,349145820	532900	40,311652648	4634,876448862
5	740	5,931588350	547600	35,183740357	4389,375379170
6	750	5,546554507	562500	30,764266900	4159,915880296
7	760	5,191126843	577600	26,947797898	3945,256400542
8	770	4,862683198	592900	23,645687881	3744,266062216
9	780	4,558863498	608400	20,783236398	3555,913528808
10	790	4,277540654	624100	18,297354043	3379,257116307
Jumlah	7450	58,646591400	5558500	356,758366005	43368,224448965
Rata-rata	745	5,864659140	555850	35,675836600	4336,822444897
	STDEV =	1,284830478E-01			

P . E =	1,460534417E+00	a	35,07643819
DELTA =	82500	b	-0,039210442

Perubahan 10 V

FWHM (keV)	Energi (keV)	R	K
49,195	661,674	7,434930192	2,436277925E+10

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	800	7,434930191	640000	55,278186946	5947,944152832
2	810	6,987176851	656100	48,820640343	5659,613249056
3	820	6,571394927	672400	43,183231292	5388,543840491
4	830	6,184952494	688900	38,253637357	5133,510570254
5	840	5,825462351	705600	33,936011598	4893,388374459
6	850	5,490756717	722500	30,148409326	4667,143209492
7	860	5,178864805	739600	26,820640674	4453,823732721
8	870	4,887992907	756900	23,892474657	4252,553828947
9	880	4,616506691	774400	21,312134029	4062,525888144
10	890	4,362915451	792100	19,035031234	3882,994751494
11	900	4,125858059	810000	17,022704719	3713,272252705
Jumlah	9350	61,666811444	7958500	357,703102173	52055,313850596
Rata-rata	850	5,606073768	723500	32,518463834	4732,301259145

STDEV =	1,134260157E-01		
P . E =	1,348846750E+00	a	33,53830062
DELTA =	121000	b	-0,032861443

Perubahan = 2 V

FWHM (keV)	Energi (keV)	R (%)	K
51,218	662,003	7,736822945	6,016153522E+09

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	600	7,736822945	360000	59,858429282	4642,093766975
2	602	7,609155404	362404	57,899245956	4580,711552976
3	604	7,484007552	364816	56,010369040	4520,340561483
4	606	7,361321563	367236	54,189055157	4460,960867309
5	608	7,241041121	369664	52,432676522	4402,553001810
6	610	7,123111379	372100	50,738715712	4345,097940963
7	612	7,007478911	374544	49,104760694	4288,577093806
8	614	6,894091679	376996	47,528500085	4232,972291205
9	616	6,782898985	379456	46,007718645	4178,265774950

11	620	6,566900903	384400	43,124187474	4071,478560044
Jumlah	6710	78,480681879	4093540	561,433951551	47847,491598689
Rata-rata	610	7,134607444	372140	51,039450141	4349,771963517

STDEV =	1,123103959E-02			
P . E =	1,049442423E-01		a	42,79790741
DELTA =	4840		b	-0,058464426

Perubahan = 2 V

FWHM (keV)	Energi (keV)	R (%)	K
60,139	662,044	9,083837328	1,52672054E+10

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	700	9,083837330	490000	82,516100632	6358,686130779
2	702	8,955173158	492804	80,195126296	6286,531557172
3	704	8,828689695	495616	77,945761726	6215,397545113
4	706	8,704343940	498436	75,765603424	6145,266821585
5	708	8,582093861	501264	73,652335041	6076,122453688
6	710	8,461898368	504100	71,603723984	6007,947840995
7	712	8,343717287	506944	69,617618160	5940,726708119
8	714	8,227511341	509796	67,691942866	5874,443097458
9	716	8,113242126	512656	65,824697793	5809,081362124
10	718	8,000872088	515524	64,013954165	5744,626159046
11	720	7,890364503	518400	62,257851992	5681,062442249
Jumlah	7810	93,191743696	5545540	791,084716081	66139,892118328
Rata-rata	710	8,471976700	504140	71,916792371	6012,717465303

STDEV =	9,844516277E-03			
P . E =	7,746729109E-02		a	50,82332468
DELTA =	4840		b	-0,059649786

Perubahan = 2 V

FWHM (keV)	Energi (keV)	R (%)	K
48,956	662,003	7,395132650	3,281259644E+10

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	850	7,395132651	722500	54,687986930	6285,862753559
2	852	7,308741863	725904	53,417707626	6227,048067633
3	854	7,223559323	729316	52,179809292	6168,919661785
4	856	7,139565361	732736	50,973393543	6111,467948956
5	858	7,056740674	736164	49,797588935	6054,683497976
6	860	6,975066315	739600	48,651550095	5998,557030667

7	862	6,894523688	743044	47,534456884	5943,079419018
8	864	6,815094540	746496	46,445513587	5888,241682413
9	866	6,736760953	749956	45,383948132	5834,034984914
10	868	6,659505337	753424	44,349011335	5780,450632609
11	870	6,583310426	756900	43,339976171	5727,480071003
Jumlah	9460	76,788001131	8136040	536,760942529	66019,825750531
Rata-rata	860	6,980727376	739640	48,796449321	6001,802340957

STDEV =	5,528981826E-03		
P . E . =	5,280234688E-02	a	41,87957025
DELTA =	4840	b	-0,040580050

Perubahan = 2 V

FWHM (keV)	Energi (keV)	R (%)	K
48,662	662,104	7,349600667	4,104060705E+10

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	890	7,349600667	792100	54,016629962	6541,144593480
2	892	7,267574696	795664	52,817641957	6482,676628514
3	894	7,186644827	799236	51,647863871	6424,860475437
4	896	7,106794011	802816	50,506521114	6367,687433834
5	898	7,028005499	806404	49,392861300	6311,148938476
6	900	6,950262841	810000	48,306153559	6255,236556927
7	902	6,873549875	813604	47,245687883	6199,941987198
8	904	6,797850725	817216	46,210774480	6145,257055443
9	906	6,723149794	820836	45,200743158	6091,173713704
10	908	6,649431760	824464	44,214942725	6037,684037701
11	910	6,576681566	828100	43,252740415	5984,780224665
Jumlah	9900	76,509546261	8910440	532,812560425	68841,591645381
Rata-rata	900	6,955413296	810040	48,437505493	6258,326513216

STDEV =	5,030163617E-03		
P . E =	4,821341692E-02	a	41,72811825
DELTA =	4840	b	-0,038636339

PERHITUNGAN SUMBER RADIASI Mn-54 (835 keV) BERDASARKAN KARAKTERISTIK ALAT

Perubahan = 50 V

FWHM (keV)	Energi (keV)	R (%)	K
57,684	835,002	6,908246926	5,371852810E+09

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	6,908246926	2,778151250	0,839367852	7,718124370	0,704538392	2,331890849
2	650	4,629747663	2,812913357	0,665557321	7,912481552	0,442966548	1,872155078
3	700	3,196199685	2,845098040	0,504633904	8,094582857	0,254655377	1,435732932
4	750	2,263694353	2,875061263	0,354817787	8,265977268	0,125895662	1,020122876
5	800	1,639359378	2,903089987	0,214674169	8,427931473	0,046084999	0,623218432
6	850	1,210680300	2,929418926	0,083029476	8,581495242	0,006893894	0,243228118
7	900	0,909727990	2,954242509	-0,041088443	8,727548805	0,001688260	-0,121385224
Jumlah	5250	20,7576563	20,097975333	2,620992068	57,728141567	1,582723132	7,404963061
Rata-rata	750	2,965379471	2,871139333	0,374427438	8,246877367	0,226103305	1,057851866
STDEV =	3,015782986E-07			log a =	14,730124104	a =	537185280990279
P . E =	5,369590434E-05			b	-5		

Perubahan = 30 V

FWHM (keV)	Energi (keV)	R (%)	K
53,320	835,194	6,384145480	4,964311525E+09

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	6,384145480	2,778151250	0,805102775	7,718124370	0,648190478	2,236697281
2	630	5,002145034	2,799340549	0,699156280	7,836307512	0,488819503	1,957176524
3	660	3,964052058	2,819543936	0,598139349	7,949828004	0,357770681	1,686480175
4	690	3,174048607	2,838849091	0,501613573	8,059064160	0,251616177	1,424005236
5	720	2,565644885	2,857332496	0,409196545	8,164348995	0,167441812	1,169210585
6	750	2,091956791	2,875061263	0,320552710	8,265977268	0,102754040	0,921608679
7	780	1,719435993	2,892094603	0,235386013	8,364211191	0,055406575	0,680758619
8	810	1,423750641	2,908485019	0,153433933	8,459285105	0,023541972	0,446260294
9	840	1,187032464	2,924279286	0,074462597	8,551409343	0,005544678	0,217749429
10	870	0,996007856	2,939519253	-0,001737236	8,640773437	3,017989504E-06	-0,005106639
11	900	0,840710516	2,954242509	-0,075353520	8,727548805	0,005678153	-0,222612573
Jumlah	8250	29,348930323	31,586899256	3,719953018	90,736878190	2,106767088	10,51222761
Rata-rata	750	2,668084575	2,871536296	0,338177547	8,248807108	0,191524281	0,955657055
STDEV =	4,495663841E-07			log a =	14,695859027	a =	496431152501456
P . E =	8,862531688E-05			b	-5		

Perubahan = 10 V

FWHM (keV)	Energi (keV)	R (%)	K
57,390	835,119	6,872074519	5,343725146E+09

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	6,872074519	2,778151250	0,837087860	7,718124370	0,700716086	2,325556686
2	610	6,326957790	2,785329835	0,801194937	7,758062290	0,641913327	2,231592162
3	620	5,832915227	2,792391689	0,765885665	7,797451348	0,586580851	2,138652765
4	630	5,384450204	2,799340549	0,731141365	7,836307512	0,534567695	2,046713670
5	640	4,976731861	2,806179974	0,696944242	7,874646046	0,485731277	1,955750976
6	650	4,605505751	2,812913357	0,663277329	7,912481552	0,439936815	1,865741658
7	660	4,267017603	2,819543936	0,630124434	7,949828004	0,397056803	1,776663528
8	670	3,957948133	2,826074803	0,597470099	7,986698790	0,356970519	1,688495191
9	680	3,675357158	2,832508913	0,565299549	8,023106741	0,319563580	1,601216010
10	690	3,416635574	2,838849091	0,533598658	8,059064160	0,284727528	1,514806066
11	700	3,179464001	2,845098040	0,502353912	8,094582857	0,252359453	1,429246131
12	710	2,961777084	2,851258349	0,471552369	8,129674171	0,222361636	1,344517628
13	720	2,761732622	2,857332496	0,441181630	8,164348995	0,194641231	1,260602608
14	730	2,577684806	2,863322860	0,411229812	8,198617801	0,169109958	1,177483720
15	740	2,408160971	2,869231720	0,381685513	8,232490662	0,145683831	1,095144182
16	750	2,251841378	2,875061263	0,352537795	8,265977268	0,124282897	1,013567759
17	760	2,107541576	2,880813592	0,323776151	8,299086953	0,104830996	0,932738736
18	770	1,974196994	2,886490725	0,295390486	8,331828707	0,087255539	0,852641899
19	780	1,850849469	2,892094603	0,267371099	8,364211191	0,071487304	0,773262511
20	790	1,736635425	2,897627091	0,239708656	8,396242760	0,057460240	0,694586295
21	800	1,630775496	2,903089987	0,212394177	8,427931473	0,045111287	0,616599409
22	810	1,532565405	2,908485019	0,185419018	8,459285105	0,034380212	0,539288435
23	820	1,441367914	2,913813852	0,158774850	8,490311166	0,025209453	0,462640358
24	830	1,356605740	2,919078092	0,132453650	8,521016909	0,017543969	0,386642549
25	840	1,277755273	2,924279286	0,106447682	8,551409343	0,011331109	0,311282751
26	850	1,204341033	2,929418926	0,080749484	8,581495242	0,006520479	0,236549065
27	860	1,135930749	2,934498451	0,055351856	8,611281160	0,003063828	0,162429935
28	870	1,072130989	2,939519253	0,030247849	8,640773437	0,000914932	0,088914135
29	880	1,012583279	2,944482672	0,005430751	8,669978207	2,94931E-05	0,015990753
30	890	0,956960648	2,949390007	-0,019105921	8,698901411	0,000365036	-0,056350813
31	900	0,904964546	2,954242509	-0,043368435	8,727548805	0,001880821	-0,128120874
Jumlah	23250	86,65145922	89,029912191	11,413606522	255,772764437	6,323588186	32,35484588
Rata-rata	750	2,795208362	2,871932651	0,368180856	8,250734337	0,203986716	1,043704706
STDEV =	3,541857494E-07			log a =	14,727844112	a =	534372514573054
P . E =	6,413256675E-05			b	-5		

Perubahan = 10 V

FWHM (keV)	Energi (keV)	R (%)	K
57,390	835,119	6,872074519	5,343725146E+09

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	600	6,872074519	360000	47,225408195	4123,244711420
2	610	6,326957790	372100	40,030394876	3859,444251888
3	620	5,832915227	384400	34,022900049	3616,407440924
4	630	5,384450204	396900	28,992303995	3392,203628258
5	640	4,976731861	409600	24,767860016	3185,108391047
6	650	4,605505751	422500	21,210683220	2993,578737999
7	660	4,267017603	435600	18,207439220	2816,231617663
8	670	3,957948133	448900	15,665353420	2651,825248829
9	680	3,675357158	462400	13,508250237	2499,242867250
10	690	3,416635574	476100	11,673398646	2357,478546129
Jumlah	6450	49,315593819	4168500	255,303991875	31494,765441406
Rata-rata	645	4,931559382	416850	25,530399188	3149,476544141

STDEV =	1,440341501E-01		
P . E =	1,947107584E+00	a	29,46443316
DELTA =	82500	b	-0,038035463

Perubahan = 10 V

FWHM (keV)	Energi (keV)	R (%)	K
56,371	835,038	6,750710746	1,134591955E+10

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	700	6,750710746	490000	45,572095570	4725,497521866
2	710	6,288512901	504100	39,545394505	4464,844159660
3	720	5,863773921	518400	34,383844598	4221,917223193
4	730	5,472999383	532900	29,953722249	3995,289549800
5	740	5,113062497	547600	26,143408099	3783,666247857
6	750	4,781161160	562500	22,859502039	3585,870870123
7	760	4,474780516	577600	20,023660665	3400,833192056
8	770	4,191660248	592900	17,570015632	3227,578390729
9	780	3,929765959	608400	15,443060495	3065,217448273
10	790	3,687264086	624100	13,595916438	2912,938627778
Jumlah	7450	50,553691417	5558500	265,090620292	37383,653231335
Rata-rata	745	5,055369142	555850	26,509062029	3738,365323134

STDEV =	1,107531093E-01		
P . E =	1,460534417E+00	a	30,23608687

DELTA = 82500 b -0,033799621

Perubahan = 10 V

FWHM (keV)	Energi (keV)	R (%)	K
54,371	835,038	6,511200688	2,133590241E+10

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	800	6,511200687	640000	42,395734382	5208,960549316
2	810	6,119077051	656100	37,443103956	4956,452411323
3	820	5,754952644	672400	33,119479939	4719,061168390
4	830	5,416522535	688900	29,338716375	4495,713704242
5	840	5,101696113	705600	26,027303231	4285,424735016
6	850	4,808574928	722500	23,122392836	4087,288688593
7	860	4,535433045	739600	20,570152908	3900,472418912
8	870	4,280699610	756900	18,324389154	3724,208660951
9	880	4,042943345	774400	16,345390891	3557,790143649
10	890	3,82058751	792100	14,598961593	3400,564288101
11	900	3,613253808	810000	13,055603080	3251,928427069
Jumlah	9350	54,005212517	7958500	274,341228344	45587,865195562
Rata-rata	850	4,909564774	723500	24,940111668	4144,351381415

STDEV = 9,933375733E-02
P . E = 1,348846750E+00 a 29,37144
DELTA = 121000 b -0,028778677

Perubahan = 2 V

FWHM (keV)	Energi (keV)	R (%)	K
56,771	835,016	6,798791879	5,286740565E+09

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	600	6,798791879	360000	46,223571012	4079,275127315
2	602	6,686603058	362404	44,710660455	4025,335040924
3	604	6,576628434	364816	43,252041556	3972,283573984
4	606	6,468817190	367236	41,845595837	3920,103217087
5	608	6,363119839	369664	40,489294083	3868,776862013
6	610	6,259488182	372100	39,181192305	3818,287791258
7	612	6,157875274	374544	37,919427894	3768,619667874
8	614	6,058235384	376996	36,702215964	3719,756525594
9	616	5,960523960	379456	35,527845876	3671,682759258
10	618	5,864697598	381924	34,394677915	3624,383115504
11	620	5,770714006	384400	33,301140139	3577,842683734

Jumlah	6710	68,965494804	4093540	433,547663037	42046,346364544
Rata-rata	610	6,269590437	372140	39,413423912	3822,395124049

STDEV = 9,869361292E-03

P . E = 1,049442426E-01 a 37,60898594

DELTA = 4840 b -0,051376058

Perubahan = 2 V

FWHM (keV)	Energi (keV)	R (%)	K
61,764	835,045	7,396487614	1,243127673E+10

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	700	7,396487612	490000	54,708028999	5177,541328613
2	702	7,291723192	492804	53,169227113	5118,789680991
3	704	7,188734407	495616	51,677902375	5060,869022582
4	706	7,087486245	498436	50,232461271	5003,765288886
5	708	6,987944481	501264	48,831368065	4947,464692337
6	710	6,890075656	504100	47,473142552	4891,953716088
7	712	6,793847062	506944	46,156357898	4837,219107953
8	714	6,699226715	509796	44,879638579	4783,247874502
9	716	6,606183345	512656	43,641658393	4730,027275303
10	718	6,514686375	515524	42,441138566	4677,544817305
11	720	6,424705902	518400	41,276845926	4625,788249368
Jumlah	7810	75,881100993	5545540	524,487769738	53854,211053929
Rata-rata	710	6,898281908	504140	47,680706340	4895,837368539

STDEV = 8,015868123E-03

P . E = 7,746729045E-02 a 41,38274143

DELTA = 4840 b -0,048569661

Perubahan = 2 V

FWHM (keV)	Energi (keV)	R (%)	K
45,030	835,025	5,392652915	2,392748747E+10

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	850	5,392652915	722500	29,080705465	4583,754978029
2	852	5,329655325	725904	28,405225888	4540,866337287
3	854	5,267538810	729316	27,746965110	4498,478143316
4	856	5,206289025	732736	27,105445408	4456,583405076
5	858	5,145891894	736164	26,480203387	4415,175245200
6	860	5,086333602	739600	25,870789513	4374,246897889
7	862	5,027600588	743044	25,276767672	4333,791706846

8	864	4,969679541	746496	24,697714738	4293,803123258
9	866	4,912557395	749956	24,133220156	4254,274703812
10	868	4,856221323	753424	23,582885542	4215,200108764
11	870	4,800658736	756900	23,046324296	4176,573100034
Jumlah	9460	55,995079154	8136040	285,426247176	48142,747749511
Rata-rata	860	5,090461741	739640	25,947840652	4376,613431774

STDEV =	4,031824926E-03			
P . E =	5,280234722E-02		a	30,53927458
DELTA =	4840		b	-0,029591643

Perubahan = 2 V

FWHM (keV)	Energi (keV)	R (%)	K
52,846	835,003	6,328839537	3,534061622E+10

No.	HV (Volt) (Xi)	R esolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	890	6,328839537	792100	40,054209890	5632,667188282
2	892	6,258205875	795664	39,165140778	5582,319640827
3	894	6,188516082	799236	38,297731297	5532,533377317
4	896	6,119755475	802816	37,451407075	5483,300905707
5	898	6,051909633	806404	36,625610205	5434,614850365
6	900	5,984964389	810000	35,819798736	5386,467950008
7	902	5,918905827	813604	35,033446185	5338,853055680
8	904	5,853720275	817216	34,266041060	5291,763128773
9	906	5,789394304	820836	33,517086403	5245,191239084
10	908	5,725914717	824464	32,786099345	5199,130562910
11	910	5,663268551	828100	32,072610678	5153,574381180
Jumlah	9900	65,883394665	8910440	395,089181654	59280,416280133
Rata-rata	900	5,989399515	810040	35,917198332	5389,128752739

STDEV =	4,331541199E-03			
P . E =	4,821341648E-02		a	35,93264132
DELTA =	4840		b	-0,033270269

EKSPERIMEN PENELITI DENGAN SUMBER RADIASI Cs-137 (662 keV)

Perubahan 50 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	57,850	662,085	8,737548804	2,778151250	0,941389615	7,718124370	0,886214406	2,615322735
2	650	55,391	662,080	8,366209522	2,812913357	0,922528737	7,912481552	0,851059270	2,594993406
3	700	53,822	662,064	8,129425554	2,845098040	0,910059858	8,094582857	0,828208946	2,589209519
4	750	52,561	662,063	7,938972575	2,875061263	0,899764302	8,265977268	0,809575799	2,586877490
5	800	50,653	662,038	7,651071389	2,903089987	0,883722254	8,427931473	0,780965023	2,565525227
6	850	49,912	662,022	7,539326488	2,929418926	0,877332551	8,581495242	0,769712405	2,570074578
7	900	48,330	662,018	7,300405729	2,954242509	0,863346997	8,727548805	0,745368038	2,550536400
Jumlah	5250			55,662960061	20,097975333	6,298144313	57,728141567	5,671103886	18,072539355
Rata-rata	750			7,951851437	2,871139333	0,899734902	8,246877367	0,810157698	2,581791336

STDEV = 2,197456190E-03 log a = 2,130416819 a = 135,025818725

P . E = 1,628224925E-01 b = -0,428638869

Perubahan 30 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	58,628	662,086	8,855043000	2,778151250	0,947190674	7,718124370	0,897170174	2,631438957
2	630	56,873	662,016	8,590879979	2,799340549	0,934037652	7,836307512	0,872426335	2,614689473
3	660	55,472	662,004	8,379405563	2,819543936	0,923213211	7,949828004	0,852322633	2,603040210
4	690	54,122	662,097	8,174330952	2,838849091	0,912452217	8,059064160	0,832569048	2,590314146
5	720	53,125	662,105	8,023651838	2,857332496	0,904372076	8,164348995	0,817888851	2,584091720
6	750	52,144	662,249	7,873775574	2,875061263	0,896183032	8,265977268	0,803144027	2,576581120
7	780	50,806	662,050	7,674042746	2,892094603	0,885024214	8,364211191	0,783267859	2,559573752
8	810	50,141	662,071	7,573356936	2,908485019	0,879288426	8,459285105	0,773148136	2,557397214
9	840	49,359	662,052	7,455456671	2,924279286	0,872474251	8,551409343	0,761211318	2,551358379
10	870	48,936	662,290	7,388908182	2,939519253	0,868580270	8,640773437	0,754431685	2,553208426
11	900	48,014	662,070	7,252103252	2,954242509	0,860463979	8,727548805	0,740398259	2,542019264
Jumlah	8250			87,240954693	31,586899256	9,883280000	90,736878190	8,887978324	28,363712660
Rata-rata	750			7,930995881	2,871536296	0,898480000	8,248807108	0,807998029	2,578519333

STDEV = 2,232563994E-03 log a = 2,292747542 a = 196,221929327

P . E = 1,656548834E-01 b = -0,485547595

Perubahan 10 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	53,585	661.620	8.099059883	2.778151250	0.908434610	7.718124370	0.825253441	2.523768748
2	610	53,095	661.625	8.024938598	2.785329835	0.904441718	7.758062290	0.818014821	2.519168502
3	620	52,666	661.636	7.959965903	2.792391689	0.900911207	7.797451348	0.811641004	2.515696969
4	630	52,303	661.642	7.905030213	2.799340549	0.897903534	7.836307512	0.806230757	2.513537773
5	640	52,139	661.657	7.880064747	2.806179974	0.896529786	7.874646046	0.803765657	2.515823931
6	650	51,816	661.674	7.831046709	2.812913357	0.893819814	7.912481552	0.798913861	2.514237694
7	660	51,433	661.689	7.772987007	2.819543936	0.890587942	7.949828004	0.793146882	2.511051830
8	670	51,162	661.697	7.731937730	2.826074803	0.888288348	7.986698790	0.789056189	2.510369317
9	680	51,031	661.711	7.711976981	2.832508913	0.887165725	8.023106741	0.787063023	2.512904822
10	690	50,820	661.725	7.679927462	2.838849091	0.885357118	8.059064160	0.783857227	2.513395250
11	700	50,557	661.747	7.639928855	2.845098040	0.883089314	8.094582857	0.779846737	2.512475677
12	710	50,400	661.769	7.615950581	2.851258349	0.881724117	8.129674171	0.777437419	2.514023251
13	720	50,296	661.785	7.600051376	2.857332496	0.880816528	8.164348995	0.775837756	2.516785689
14	730	50,079	661.805	7.567032585	2.863322860	0.878925604	8.198617801	0.772510218	2.516647775
15	740	49,882	661.822	7.537071902	2.869231720	0.877202658	8.232490662	0.769484504	2.516897692
16	750	49,691	661.843	7.507973945	2.875061263	0.875522757	8.265977268	0.766540098	2.517181563
17	760	49,507	661.859	7.479991962	2.880813592	0.873901131	8.299086953	0.763703187	2.517546257
18	770	49,375	661.865	7.459980510	2.886490725	0.872737693	8.331828707	0.761671080	2.519149256
19	780	49,245	661.889	7.440069256	2.892094603	0.871576978	8.364211191	0.759646429	2.520683074
20	790	49,120	661.907	7.420982102	2.897627091	0.870461384	8.396242760	0.757703021	2.522272489
21	800	48,982	661.920	7.399987914	2.903089987	0.869231010	8.427931473	0.755562549	2.523455843
22	810	48,752	661.939	7.365029104	2.908485019	0.867174467	8.459285105	0.751991557	2.522163947
23	820	48,787	661.964	7.370038250	2.913813852	0.867469742	8.490311166	0.752503753	2.527645350
24	830	48,583	661.979	7.339054562	2.919078092	0.865640116	8.521016909	0.749332811	2.526871100
25	840	48,352	661.993	7.304004725	2.924279286	0.863561045	8.551409343	0.745737679	2.525293678
26	850	48,425	662.002	7.314932583	2.929418926	0.864210328	8.581495242	0.746859491	2.531634090
27	860	48,386	662.012	7.308930956	2.934498451	0.863853859	8.611281160	0.746243490	2.534977812
28	870	48,309	662.034	7.297057251	2.939519253	0.863147754	8.640773437	0.745024045	2.537239440
29	880	48,245	662.076	7.286927785	2.944482672	0.862544466	8.669978207	0.743982955	2.539747233
30	890	48,202	662.109	7.280070200	2.949390007	0.862135567	8.698901411	0.743277736	2.542774026
31	900	48,111	662.137	7.266018966	2.954242509	0.861296527	8.727548805	0.741831708	2.544478814
Jumlah	23250			234.398020603	89.029912191	27.229662850	255.772764437	23.923671084	78.179898891
Rata-rata	750			7.561226471	2.871932651	0.878376221	8.250734337	0.771731325	2.521932222

STDEV = 2.286715254E-03
P . E = 1.735562507E-01

log a = 1.618216003 a = 41.516047816
b = -0.257610422

Perubahan 10 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	600	53,585	661.620	8.099059883	360000	65.594770988	4859.435929800
2	610	53,095	661.625	8.024938598	372100	64.399639502	4895.212544780
3	620	52,666	661.636	7.959965903	384400	63.361057177	4935.178859860
4	630	52,303	661.642	7.905030213	396900	62.489502668	4980.169034190
5	640	52,139	661.657	7.880064747	409600	62.095420417	5043.241438080
6	650	51,816	661.674	7.831046709	422500	61.325292559	5090.180360850
7	660	51,433	661.689	7.772987007	435600	60.419327011	5130.171424620
8	670	51,162	661.697	7.731937730	448900	59.782861061	5180.398279100
9	680	51,031	661.711	7.711976981	462400	59.474588955	5244.144347080
10	690	50,820	661.725	7.679927462	476100	58.981285822	5299.149948780
Jumlah	6450			78.596935233	4168500	617.923746160	50657.282167140
Rata-rata	645			7.859693523	416850	61.792374616	5065.728216714

STDEV = 2.021858939E-02
P . E = 1.714959948E-01
DELTA = 82500

a 10.81035807
b -0.004574674

Perubahan 10 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	700	50,557	661.747	7.639928855	490000	58.368512909	5347.950198500
2	710	50,400	661.769	7.615950581	504100	58.002703252	5407.324912510
3	720	50,296	661.785	7.600051376	518400	57.760780918	5472.036990720
4	730	50,079	661.805	7.567032585	532900	57.259982142	5523.933787050
5	740	49,882	661.822	7.537071902	547600	56.807452856	5577.433207480
6	750	49,691	661.843	7.507973945	562500	56.369672759	5630.980458750
7	760	49,507	661.859	7.479991962	577600	55.950279752	5684.793891120
8	770	49,375	661.865	7.459980510	592900	55.651309210	5744.184992700
9	780	49,245	661.889	7.440069256	608400	55.354630534	5803.254019680
10	790	49,120	661.907	7.420982102	624100	55.070975358	5862.575860580
Jumlah	7450			75.269033074	5558500	566.596299690	56054.468319090
Rata-rata	745			7.526903307	555850	56.659629969	5605.446831909

STDEV = 6.203677664E-03
P . E = 5.494670172E-02
DELTA = 82500

a 9.419774116
b -0.002540766

Perubahan 10 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	800	48,982	661.920	7.399987914	640000	54.759821127	5919.990331200
2	810	48,752	661.939	7.365029104	656100	54.243653703	5965.673574240
3	820	48,787	661.964	7.370038250	672400	54.317463806	6043.431365000
4	830	48,583	661.979	7.339054562	688900	53.861721864	6091.415286460
5	840	48,352	661.993	7.304004725	705600	53.348485023	6135.363969000
6	850	48,425	662.002	7.314932583	722500	53.508238694	6217.692695550
7	860	48,386	662.012	7.308930956	739600	53.420471720	6285.680622160
8	870	48,309	662.034	7.297057251	756900	53.247044524	6348.439808370
9	880	48,245	662.076	7.286927785	774400	53.099316544	6412.496450800
10	890	48,202	662.109	7.280070200	792100	52.999422117	6479.262478000
11	900	48,111	662.137	7.266018966	810000	52.795031614	6539.417069400
Jumlah	9350			80.532052296	7958500	589.600670736	68438.863650180
Rata-rata	850			7.321095663	723500	53.600060976	6221.714877289

STDEV = 1.305978710E-02
P . E = 1.189237941E-01
DELTA = 121000

a 8.355066682
b -0.001216436

Perubahan 2 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	600	62.218	662.003	9.398~~446835~~	360000	88.330802910	5639.068101000
2	602	61.974	662.047	9.360~~966820~~	362404	87.627699805	5635.302025640
3	604	61.958	662.041	9.358634888	364816	87.584046967	5652.615472352
4	606	61.886	662.040	9.347773548	367236	87.380870305	5664.750770088
5	608	61.586	662.057	9.302220202	369664	86.531300686	5655.749882816
6	610	60.773	662.085	9.179032904	372100	84.254645053	5599.210071440
7	612	60.659	662.005	9.162921730	374544	83.959134630	5607.708098760
8	614	60.381	662.081	9.119881102	376996	83.172231315	5599.606996628
9	616	60.221	662.036	9.096333130	379456	82.743276412	5603.341208080
10	618	60.028	662.016	9.067454563	381924	82.218732252	5603.686919934
11	620	60.001	662.019	9.063335040	384400	82.144042047	5619.267724800
Jumlah	6710			101.457000762	4093540	935.946782382	61880.307271538
Rata-rata	610			9.223363706	372140	85.086071126	5625.482479231

STDEV = 3.193452445E-02
P . E = 2.308234137E-01
DELTA = 4840

a 20.95642712
b -0.019234530

Perubahan 2 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	700	58.991	662.044	8.910434956	490000	79.395851105	6237.304469200
2	702	58.981	662.016	8.909301286	492804	79.375649405	6254.329502772
3	704	58.904	662.027	8.897522306	495616	79.165903186	6263.855703424
4	706	58.714	662.046	8.868568045	498436	78.651499169	6261.209039770
5	708	58.452	662.091	8.828393680	501264	77.940534969	6250.502725440
6	710	58.215	662.020	8.793540981	504100	77.326362985	6243.414096510
7	712	58.183	662.010	8.788840048	506944	77.243709389	6257.654114176
8	714	58.047	662.057	8.767674082	509796	76.872108808	6260.119294548
9	716	57.051	662.001	8.617962813	512656	74.269283046	6170.461374108
10	718	57.001	662.007	8.610331915	515524	74.137815686	6182.218314970
11	720	56.897	662.029	8.594336502	518400	73.862619910	6187.922281440
Jumlah	7810			96.586906614	5545540	848.241337658	68568.990916358
Rata-rata	710			8.780627874	504140	77.112848878	6233.544628760

STDEV = 3.720143806E-02
P . E = 2.824508573E-01
DELTA = 4840

a 21.22624947
b -0.017529045

Perubahan 2 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	850	55.797	662.003	8.428511653	722500	71.039808685	7164.234905050
2	852	55.469	662.005	8.378939736	725904	70.206631100	7138.856655072
3	854	55.353	662.038	8.361000426	729316	69.906328124	7140.294363804
4	856	55.139	662.023	8.328864707	732736	69.369987308	7129.508189192
5	858	55.010	662.037	8.309203262	736164	69.042858849	7129.296398796
6	860	54.851	662.047	8.285061333	739600	68.642241292	7125.152746380
7	862	54.629	662.046	8.251541434	743044	68.087936037	7112.828716108
8	864	53.731	662.014	8.116293613	746496	65.874222012	7012.477681632
9	866	53.111	662.045	8.022264348	749956	64.356725269	6947.280925368
10	868	53.061	662.035	8.014833053	753424	64.237548867	6956.875090004

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
11	870	53.002	662.037	8.005896951	756900	64.094385990	6965.130347370
Jumlah	9460			90.502410516	8136040	744.858673532	77821.936018776
Rata-rata	860			8.227491865	739640	67.714424867	7074.721456252

STDEV = 4.382215671E-02
P . E = 3.550872078E-01
DELTA = 4840

a 28.04076797
b -0.023038693

Perubahan 2 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	890	52.476	662.104	7.925643101	792100	62.815818564	7053.822359890
2	892	52.214	662.091	7.886227120	795664	62.192578188	7034.514591040
3	894	52.114	662.049	7.871622795	799236	61.962445427	7037.230778730
4	896	52.007	662.027	7.855721897	802816	61.712366523	7038.726819712
5	898	51.754	662.026	7.817517741	806404	61.113583631	7020.130931418
6	900	51.513	662.022	7.781161351	810000	60.546471970	7003.045215900
7	902	51.313	662.062	7.750482583	813604	60.069980269	6990.935289866
8	904	51.145	662.000	7.725830816	817216	59.688461797	6984.151057664
9	906	50.589	662.012	7.641704380	820836	58.395645831	6923.384168280
10	908	50.129	662.073	7.571521569	824464	57.327938870	6874.941584652
11	910	49.131	662.062	7.420906199	828100	55.069848814	6753.024641090
Jumlah	9900			85.248339552	8910440	660.895139886	76713.907438242
Rata-rata	900			7.749849050	810040	60.081376353	6973.991585295

STDEV = 5.164233829E-02
P . E = 4.442438208E-01
DELTA = 4840

a 27.3824461
b -0.021813997

EKSPERIMEN PENELITI DENGAN SUMBER RADIASI Mn-54 (835 keV)

Perubahan = 50 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	64.796	835,080	7,759256598	2,778151250	0,889820114	7,718124370	0,791779836	2,472054863
2	650	63.160	835,047	7,563646118	2,812913357	0,878731201	7,912481552	0,772168524	2,471794733
3	700	61.013	835,036	7,306631091	2,845098040	0,863717181	8,094582857	0,746007368	2,457360057
4	750	59.089	835,033	7,076247286	2,875061263	0,849803001	8,265977268	0,722165141	2,443235691
5	800	57.730	835,018	6,913623419	2,903089987	0,839705720	8,427931473	0,705105696	2,437741268
6	850	56.556	835,008	6,773108761	2,929418926	0,830788049	8,581495242	0,690208783	2,433726235
7	900	54.824	835,000	6,565748503	2,954242509	0,817284243	8,727548805	0,667953534	2,414455854
Jumlah	5250			49,958261776	20,097975333	5,969849510	57,728141567	5,095388882	17,130368701
Rata-rata	750			7,136894539	2,871139333	0,852835644	8,246877367	0,727912697	2,447195529

STDEV = 1,612581192E-03 log a = 2,034642567 a = 108,303518877

P . E = 1,260564255E-01 b = -0,411616012

Perubahan = 30 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	59,654	835,099	7,143344681	2,778151250	0,853901606	7,718124370	0,729147953	2,372267815
2	630	57,413	835,235	6,873873820	2,799340549	0,837201556	7,836307512	0,700906445	2,343612263
3	660	56,446	835,097	6,759214798	2,819543936	0,829896248	7,949828004	0,688727782	2,339928933
4	690	55,299	835,033	6,622373008	2,838849091	0,821013639	8,059064160	0,674063395	2,330733822
5	720	54,897	835,159	6,573239347	2,857332496	0,817779446	8,164348995	0,668763223	2,336667787
6	750	53,991	835,050	6,465600862	2,875061263	0,810608891	8,265977268	0,657086774	2,330550222
7	780	53,394	835,161	6,393258306	2,892094603	0,805722252	8,364211191	0,649188347	2,330224975
8	810	52,832	835,253	6,325269110	2,908485019	0,801079007	8,459285105	0,641727576	2,329926292
9	840	52,223	835,038	6,253966885	2,924279286	0,796155577	8,551409343	0,633863703	2,328181263
10	870	51,754	835,070	6,197564276	2,939519253	0,792221040	8,640773437	0,627614176	2,328748998
11	900	51,487	835,371	6,163369329	2,954242509	0,789818193	8,727548805	0,623812778	2,333314480
Jumlah	8250			71,771074422	31,586899256	8,955397455	90,736878190	7,294902152	25,704156851
Rata-rata	750			6,524643129	2,871536296	0,814127041	8,248807108	0,663172923	2,336741532

STDEV = 3,542998421E-03 log a = 1,794578192 a = 62,312932827

P . E = 2,901265807E-01 b = -0,341437840

Perubahan = 10 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	log Xi	log Yi	(log Xi)^2	(log Yi)^2	log Xi . Log Yi
1	600	56.817	834.810	6.805979804	2.778151250	0.832890656	7.718124370	0.693706845	2.313896218
2	610	56.268	834.836	6.740006420	2.785329835	0.828660310	7.758062290	0.686677910	2.308092285
3	620	56.036	834.867	6.711967295	2.792391689	0.826849832	7.797451348	0.683680644	2.308888598
4	630	55.905	834.899	6.696019519	2.799340549	0.825816711	7.836307512	0.681973240	2.311742205
5	640	55.772	834.905	6.680041442	2.806179974	0.824779157	7.874646046	0.680260657	2.314478753
6	650	55.606	834.931	6.659951541	2.812913357	0.823471069	7.912481552	0.678104602	2.316352769
7	660	55.441	834.952	6.640022420	2.819543936	0.822169546	7.949828004	0.675962762	2.318143157
8	670	55.233	834.961	6.615039505	2.826074803	0.820532442	7.986698790	0.673273489	2.318886060
9	680	55.183	834.974	6.608948303	2.832508913	0.820132355	8.023106741	0.672617079	2.323032204
10	690	55.050	834.981	6.592964391	2.838849091	0.819080730	8.059064160	0.670893242	2.325246586
11	700	55.009	834.989	6.587990980	2.845098040	0.818752996	8.094582857	0.670356468	2.329432544
12	710	54.868	834.996	6.571049442	2.851258349	0.817634735	8.129674171	0.668526560	2.331287864
13	720	54.777	835.008	6.560056910	2.857332496	0.816907607	8.164348995	0.667338038	2.334176652
14	730	54.702	835.019	6.550988660	2.863322860	0.816306848	8.198617801	0.666356870	2.337350058
15	740	54.611	835.033	6.539981055	2.869231720	0.815576490	8.232490662	0.665165011	2.340077936
16	750	54.529	835.048	6.530043782	2.875061263	0.814916093	8.265977268	0.664088239	2.342933692
17	760	54.446	835.059	6.520018346	2.880813592	0.814248818	8.299086953	0.663001137	2.345699062
18	770	54.330	835.072	6.506025828	2.886490725	0.813315783	8.331828707	0.661482563	2.347628464
19	780	54.222	835.084	6.492999507	2.892094603	0.812445370	8.364211191	0.660067479	2.349668869
20	790	54.114	835.093	6.479996839	2.897627091	0.811574794	8.396242760	0.658653646	2.351641110
21	800	54.065	835.109	6.474005190	2.903089987	0.811173043	8.427931473	0.658001706	2.354908340
22	810	53.983	835.135	6.463984865	2.908485019	0.810500331	8.459285105	0.656910786	2.357328070
23	820	53.893	835.159	6.453022718	2.913813852	0.809763194	8.490311166	0.655716430	2.359499212
24	830	53.826	835.166	6.444946274	2.919078092	0.809219301	8.521016909	0.654835878	2.362174335
25	840	53.786	835.179	6.440056563	2.924279286	0.808889682	8.551409343	0.654302517	2.365419341
26	850	53.820	835.185	6.443996379	2.929418926	0.809155288	8.581495242	0.654732280	2.370354814
27	860	53.763	835.196	6.437056025	2.934498451	0.808687289	8.611281160	0.653975131	2.373091597
28	870	53.761	835.203	6.436932169	2.939519253	0.808678933	8.640773437	0.653961616	2.377127292
29	880	53.745	835.211	6.434962518	2.944482672	0.808546022	8.669978207	0.653746669	2.380749750
30	890	53.706	835.238	6.430023538	2.949390007	0.808212563	8.698901411	0.653207547	2.383734056
31	900	53.682	835.252	6.427042378	2.954242509	0.808011164	8.727548805	0.652882040	2.387060927
Jumlah	23250			202.976120606	89.029912191	25.296899150	255.772764437	20.644459083	72.640102819
Rata-rata	750			6.547616794	2.871932651	0.816029005	8.250734337	0.665950293	2.343229123

STDEV = 1.421255908E-03
P . E = 1.161115516E-01

log a = 1.184539538 a = 15.294649823
b = -0.128314476

Perubahan = 10 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	600	56.817	834.810	6.805979804	360000	46.321361092	4083.587882400
2	610	56.268	834.836	6.740006420	372100	45.427686542	4111.403916200
3	620	56.036	834.867	6.711967295	384400	45.050504969	4161.419722900
4	630	55.905	834.899	6.696019519	396900	44.836677399	4218.492296970
5	640	55.772	834.905	6.680041442	409600	44.622953667	4275.226522880
6	650	55.606	834.931	6.659951541	422500	44.354954528	4328.968501650
7	660	55.441	834.952	6.640022420	435600	44.089897738	4382.414797200
8	670	55.233	834.961	6.615039505	448900	43.758747653	4432.076468350
9	680	55.183	834.974	6.608948303	462400	43.678197672	4494.084846040
10	690	55.050	834.981	6.592964391	476100	43.467179461	4549.145429790
Jumlah	6450			66.750940640	4168500	445.608160721	43036.820384380
Rata-rata	645			6.675094064	416850	44.560816072	4303.682038438

STDEV = 1.611519382E-02
P . E = 1.609484816E-01
DELTA = 82500

a 8.046116104
b -0.002125616

Perubahan = 10 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	700	55.009	834.989	6.587990980	490000	43.401625153	4611.593686000
2	710	54.868	834.996	6.571049442	504100	43.178690769	4665.445103820
3	720	54.777	835.008	6.560056910	518400	43.034346662	4723.240975200
4	730	54.702	835.019	6.550988660	532900	42.915452423	4782.221721800
5	740	54.611	835.033	6.539981055	547600	42.771352200	4839.585980700
6	750	54.529	835.048	6.530043782	562500	42.641471795	4897.532836500
7	760	54.446	835.059	6.520018346	577600	42.510639232	4955.213942960
8	770	54.330	835.072	6.506025828	592900	42.328372075	5009.639887560
9	780	54.222	835.084	6.492999507	608400	42.159042598	5064.539615460
10	790	54.114	835.093	6.479996839	624100	41.990359033	5119.197502810
Jumlah	7450			65.339151349	5558500	426.93135:940	48668.211252810
Rata-rata	745			6.533915135	555850	42.693135194	4866.821125281

STDEV = 2.307409678E-03
P . E = 2.354290019E-02
DELTA = 82500

a 7.387865939
b -0.001146243

Perubahan = 10 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	800	54.065	835.109	6.474005190	640000	41.912743200	5179.204152000
2	810	53.983	835.135	6.463984865	656100	41.783100335	5235.827740650
3	820	53.893	835.159	6.453022718	672400	41.641502199	5291.478628760
4	830	53.826	835.166	6.444946274	688900	41.537332475	5349.305407420
5	840	53.786	835.179	6.440056563	705600	41.474328535	5409.647512920
6	850	53.820	835.185	6.443996379	722500	41.525089333	5477.396922150
7	860	53.763	835.196	6.437056025	739600	41.435690269	5535.868181500
8	870	53.761	835.203	6.436932169	756900	41.434095748	5600.130987030
9	880	53.745	835.211	6.434962518	774400	41.408742608	5662.767015840
10	890	53.706	835.238	6.430023538	792100	41.345202699	5722.720948820
11	900	53.682	835.252	6.427042378	810000	41.306873729	5784.338140200
Jumlah	9350			70.886028617	7958500	456.804701129	60248.685637290
Rata-rata	850			6.444184420	723500	41.527700103	5477.153239754

STDEV = 5.465583930E-03
P . E = 5.654280484E-02
DELTA = 121000

a 6.787173882
b -0.000403517

Perubahan 2 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	600	66.802	835.016	8.000086226	360000	64.001379623	4800.051735600
2	602	66.673	835.069	7.984130653	362404	63.746342284	4806.446653106
3	604	66.673	835.091	7.983920315	364816	63.742983596	4822.287870260
4	606	66.571	835.088	7.971734715	367236	63.548554366	4830.871237290
5	608	66.398	835.044	7.951437290	369664	63.225354977	4834.473872320
6	610	66.352	834.849	7.947784569	372100	63.167279555	4848.148587090
7	612	66.151	835.009	7.922190060	374544	62.761095347	4848.380316720
8	614	66.158	835.197	7.921244928	376996	62.746121209	4863.644385792
9	616	66.085	835.023	7.914153263	379456	62.633821870	4875.118410008
10	618	66.014	835.041	7.905480090	381924	62.496615453	4885.586695620
11	620	66.003	835.015	7.904408903	384400	62.479680106	4900.733519860
Jumlah	6710			87.406571012	4093540	694.549228388	53315.743283666
Rata-rata	610			7.946051910	372140	63.140838944	4846.885753061

STDEV = 6.814092770E-03
P . E = 5.716963046E-02 a 11.0862122
DELTA = 4840 b -0.005147804

Perubahan 2 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	700	65.986	835.045	7.902089109	490000	62.443012287	5531.462376300
2	702	65.882	835.032	7.889757518	492804	62.248273693	5538.609777636
3	704	65.853	835.040	7.886209044	495616	62.192293086	5551.891166976
4	706	65.618	835.022	7.858236070	498436	61.751874132	5547.914665420
5	708	65.528	835.003	7.847636476	501264	61.585398259	5556.126625008
6	710	65.351	835.165	7.824920824	504100	61.229385902	5555.693785040
7	712	65.216	835.039	7.809934626	506944	60.995078862	5560.673453712
8	714	65.029	835.103	7.786943646	509796	60.636491346	5559.877763244
9	716	65.119	835.020	7.798495844	512656	60.816537429	5583.723024304
10	718	65.007	835.086	7.784467708	515524	60.597937497	5589.247814344
11	720	64.869	834.917	7.769514814	518400	60.365360445	5594.050666080
Jumlah	7810			86.158205679	5545540	674.861642937	61169.271118064
Rata-rata	710			7.832564153	504140	61.351058449	5560.842828915

STDEV = 9.186064046E-03
P . E = 7.818694591E-02 a 12.76208451
DELTA = 4840 b -0.006942986

Perubahan 2 V

No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	850	64.739	835.025	7.752941529	722500	60.108102352	6590.000299650
2	852	64.571	835.065	7.732451965	725904	59.790813391	6588.049074180
3	854	64.430	835.001	7.716158424	729316	59.539100824	6589.599294096
4	856	64.429	835.053	7.715558174	732736	59.529837936	6604.517796944
5	858	64.312	835.087	7.701233524	736164	59.308997791	6607.658363592
6	860	64.824	835.070	7.762702528	739600	60.259550538	6675.924174080
7	862	64.111	835.081	7.677219336	743044	58.939696733	6617.763067632
8	864	64.004	835.057	7.664626487	746496	58.746499185	6622.237284768
9	866	63.973	835.055	7.660932513	749956	58.689886969	6634.367556258
10	868	63.418	835.044	7.594569867	753424	57.677491465	6592.086644556
11	870	63.105	835.022	7.557285916	756900	57.112570416	6574.838746920

Jumlah	9460
Rata-rata	860

84.535680263	8136040	649.702547601	72697.042302676
7.685061842	739640	59.06386796	6608.822027516

STDEV = 3.408993168E-02
P . E = 2.957246355E-01
DELTA = 4840

a 14.80493051
b -0.008278917

Perubahan 2 V

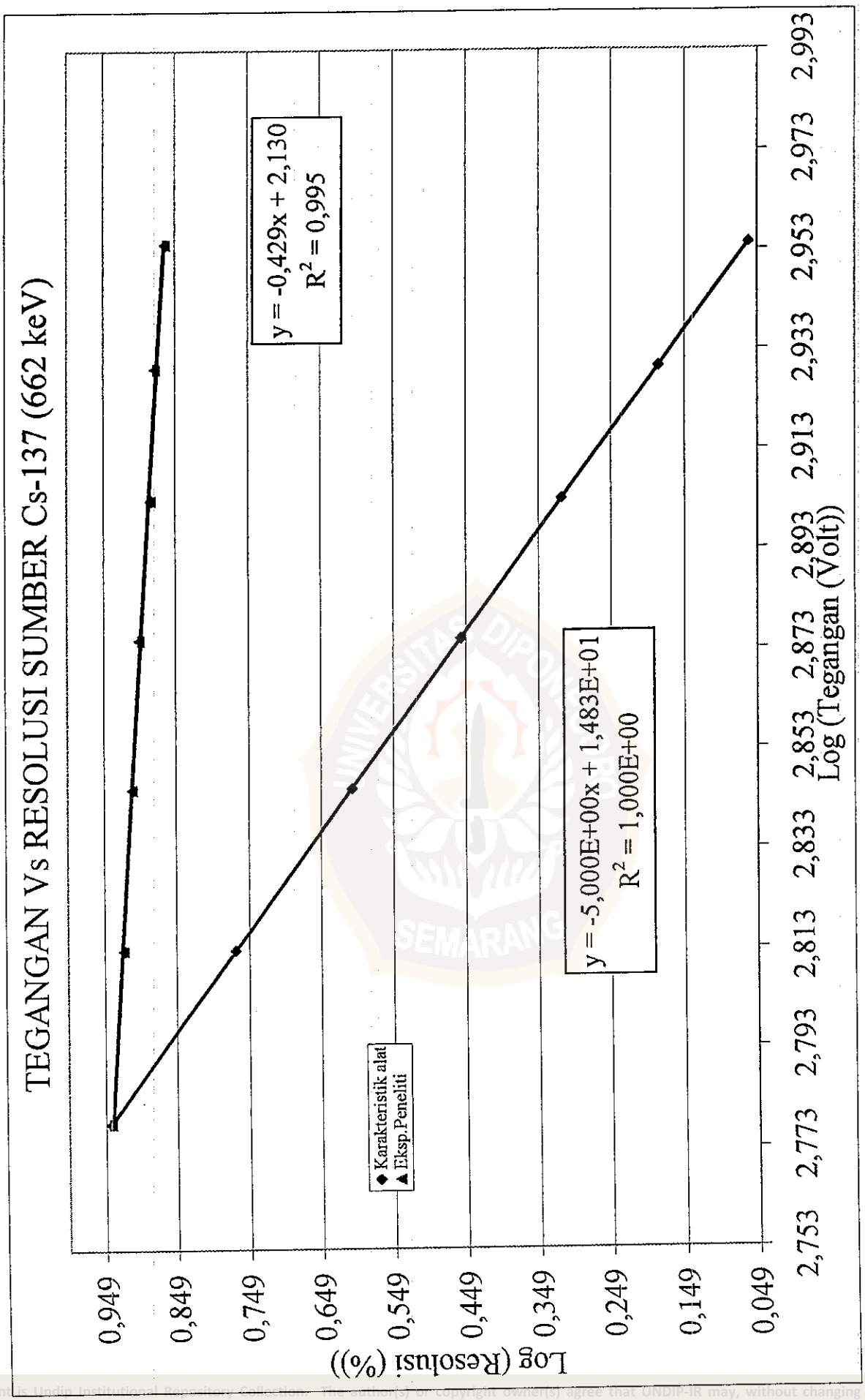
No.	HV (Volt) (Xi)	FWHM (keV)	ENERGI (keV)	Resolusi (%) (Yi)	Xi^2	Yi^2	Xi . Yi
1	890	62.759	835.003	7.516020901	792100	56.490570184	6689.258601890
2	892	62.123	835.073	7.439229864	795664	55.342140969	6635.793038688
3	894	62.007	835.013	7.425872412	799236	55.143581079	6638.729936328
4	896	61.589	835.056	7.375433504	802816	54.397019372	6608.388419584
5	898	61.154	835.066	7.323253491	806404	53.630041693	6576.281634918
6	900	60.054	835.066	7.191527376	810000	51.718066000	6472.374638400
7	902	59.861	835.113	7.168011994	813604	51.380395946	6465.546818588
8	904	59.419	835.063	7.115511045	817216	50.630497432	6432.421984680
9	906	59.106	835.091	7.077791522	820836	50.095132829	6412.479118932
10	908	58.427	835.054	6.996793022	824464	48.955112593	6353.088063976
11	910	57.581	835.015	6.895804267	828100	47.552116489	6275.181882970
Jumlah	9900			79.525249398	8910440	575.334674586	71559.544138954
Rata-rata	900			7.229568127	810040	52.303152235	6505.413103541

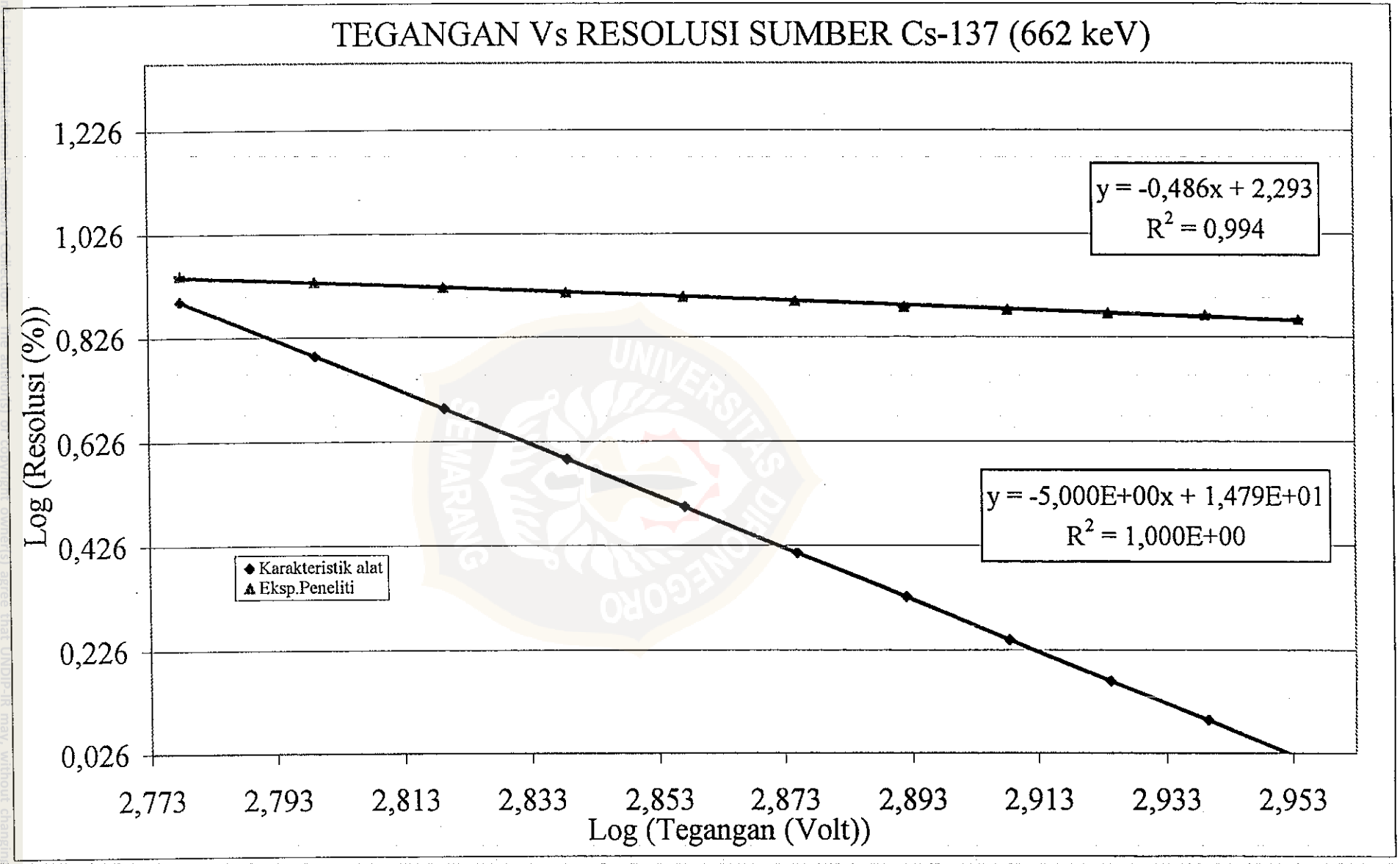
STDEV = 2.717475208E-02
P . E = 2.505889849E-01
DELTA = 4840

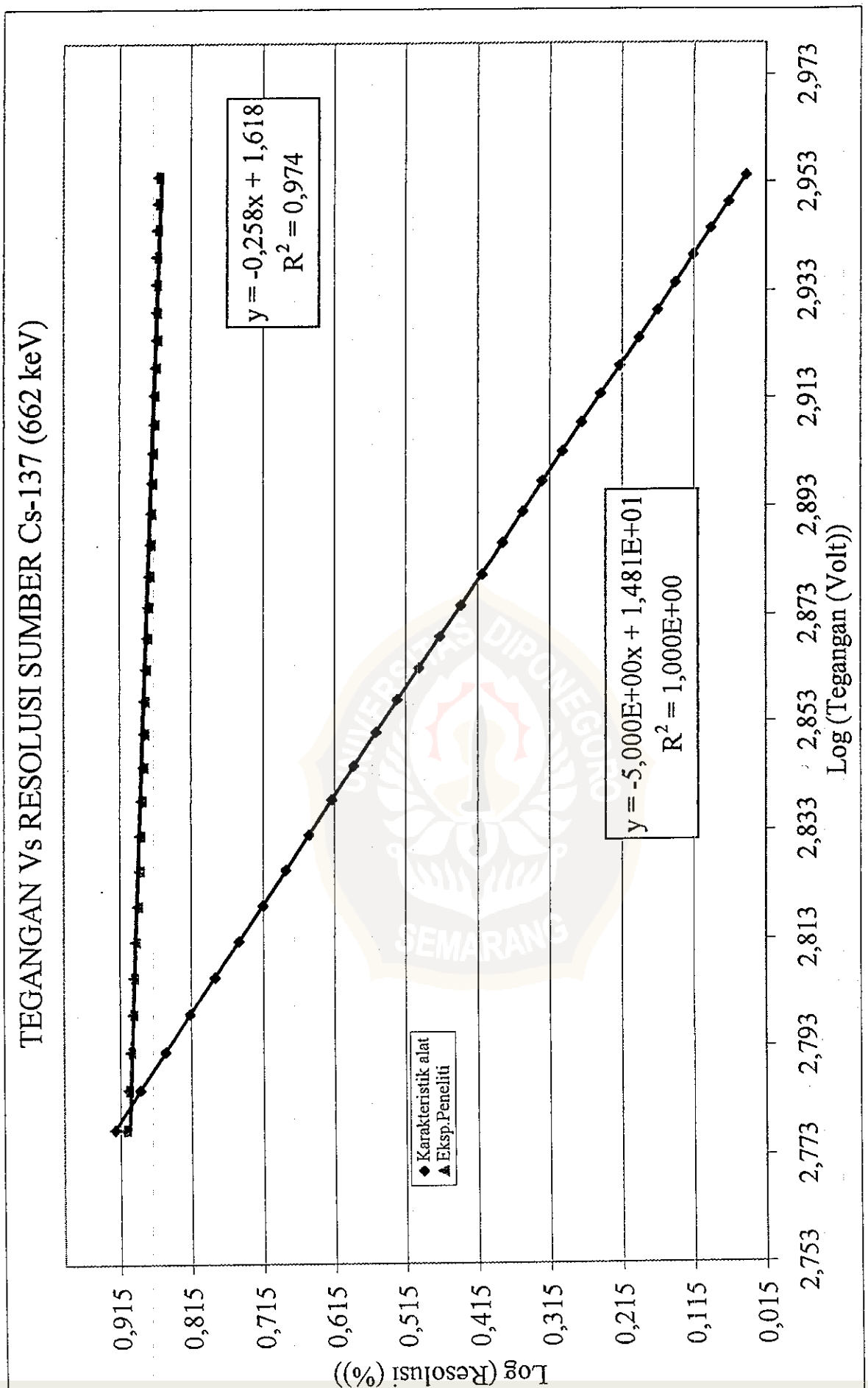
a 34.18931204
b -0.029955271

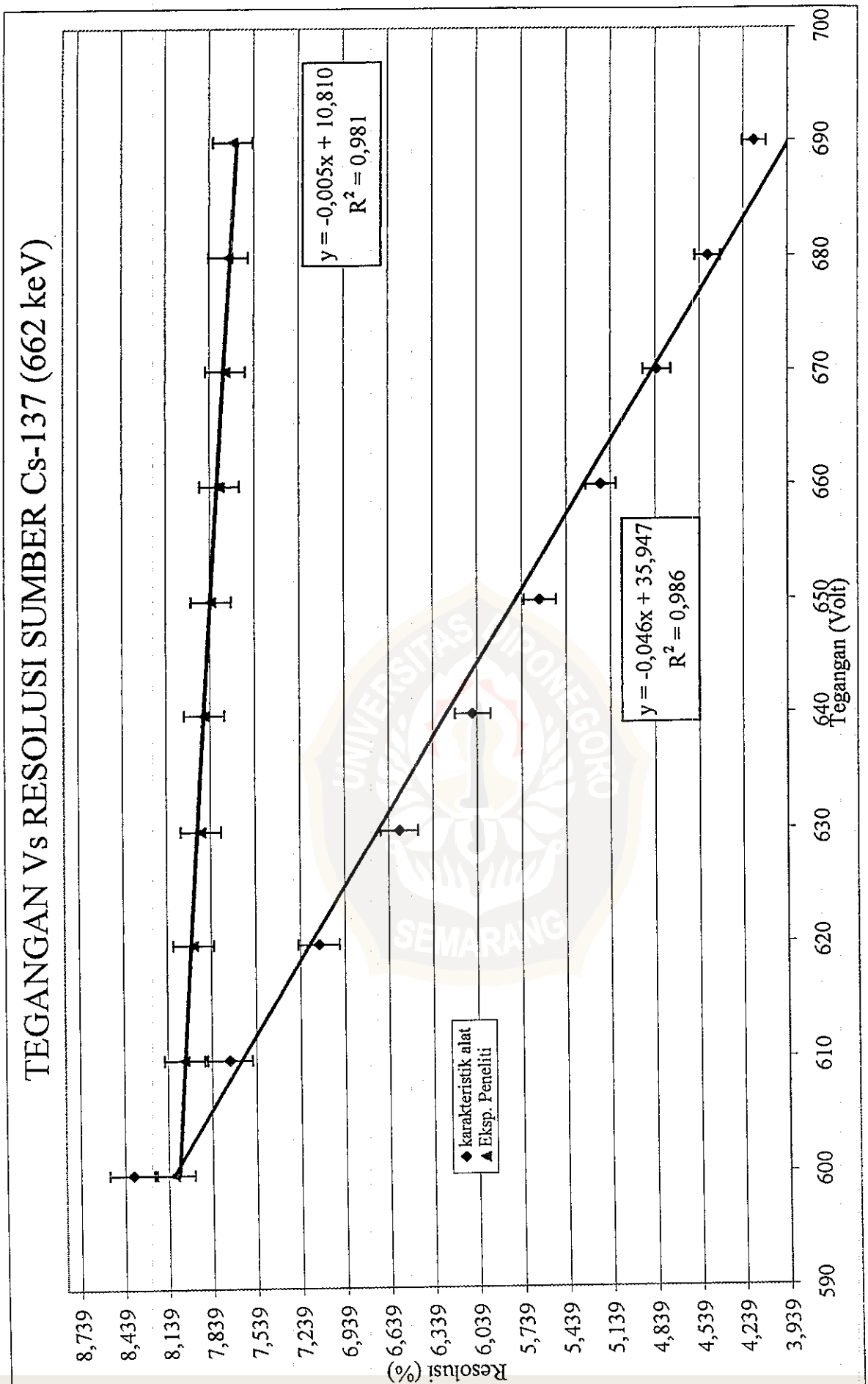
LAMPIRAN C

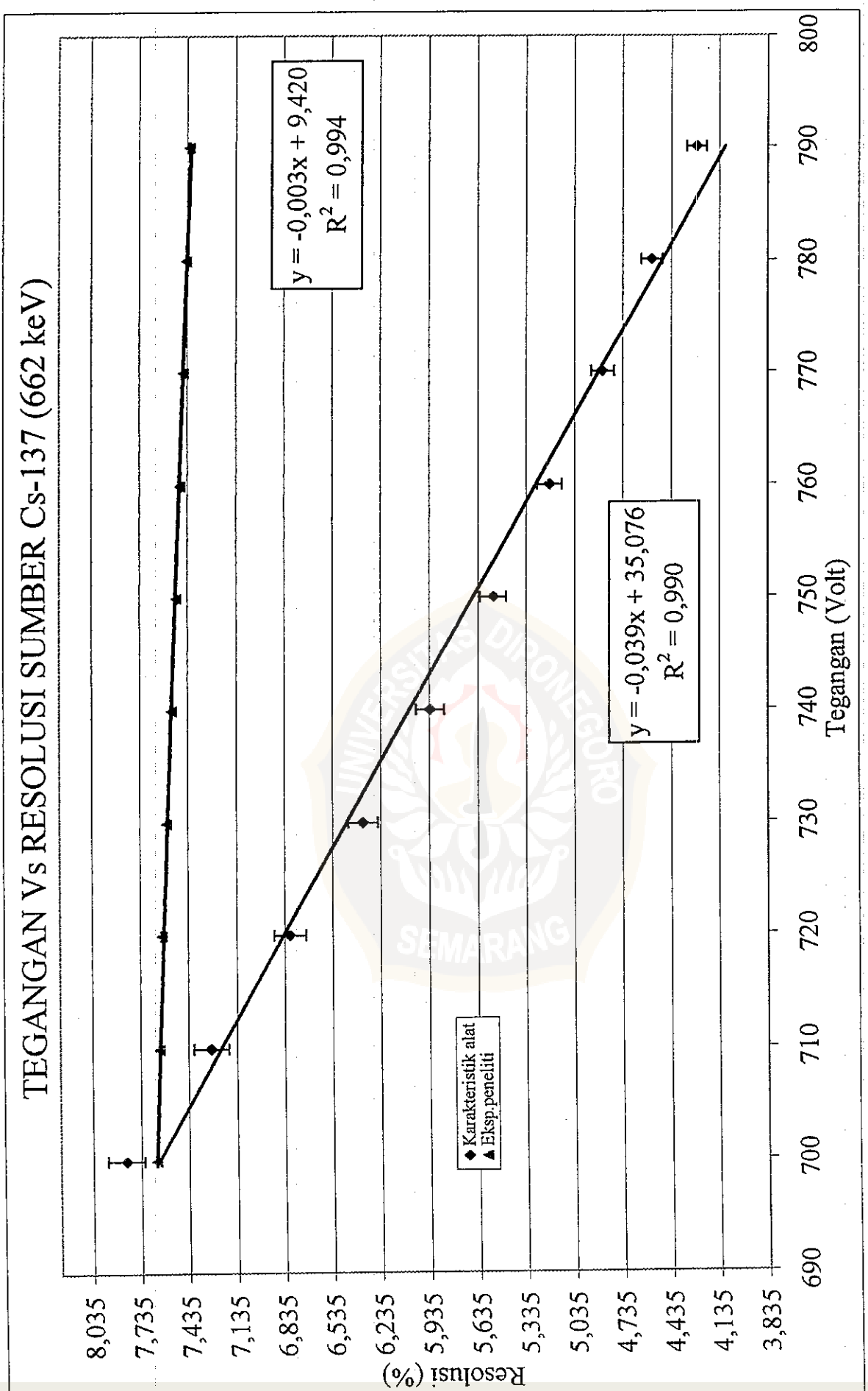
Grafik

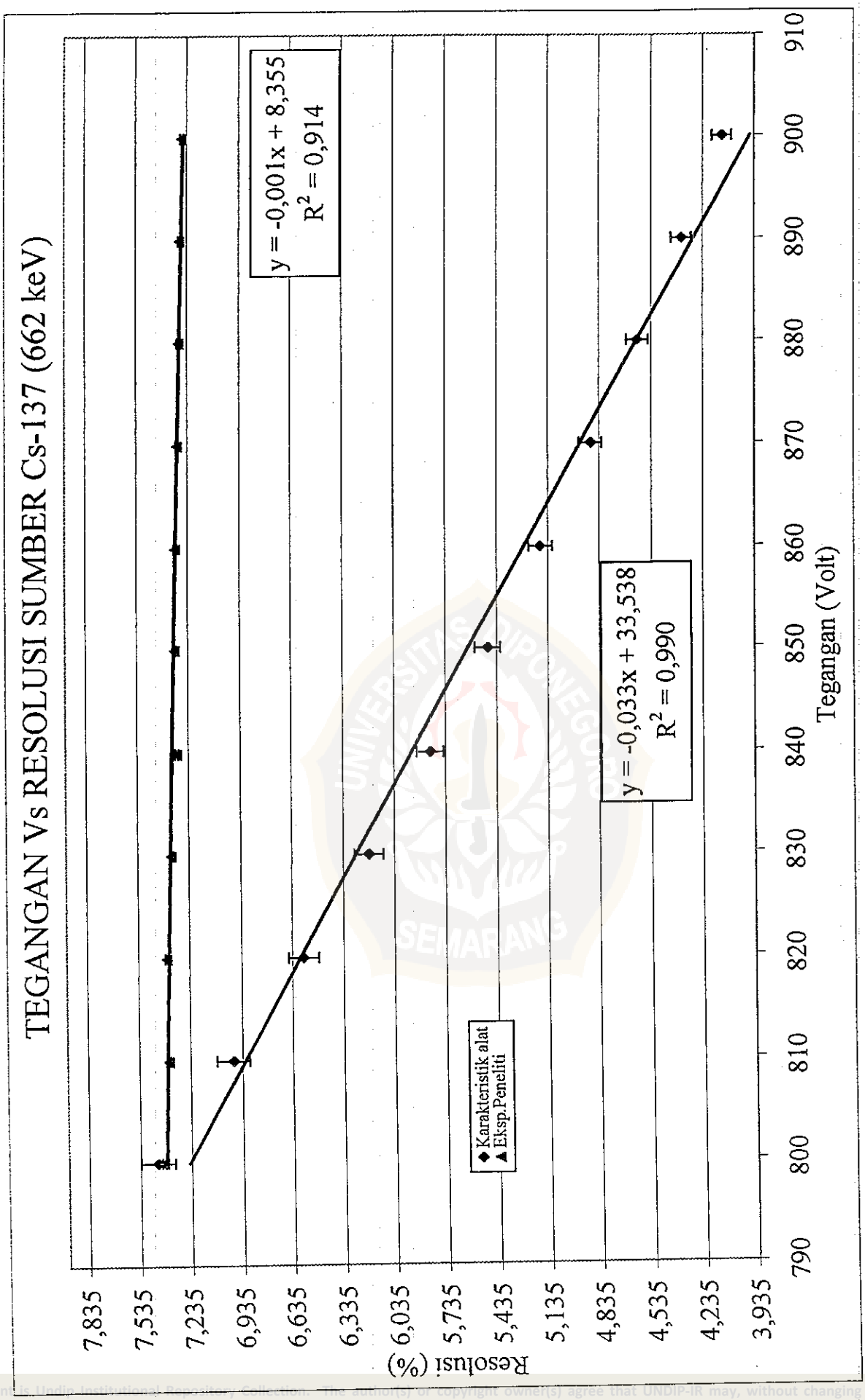


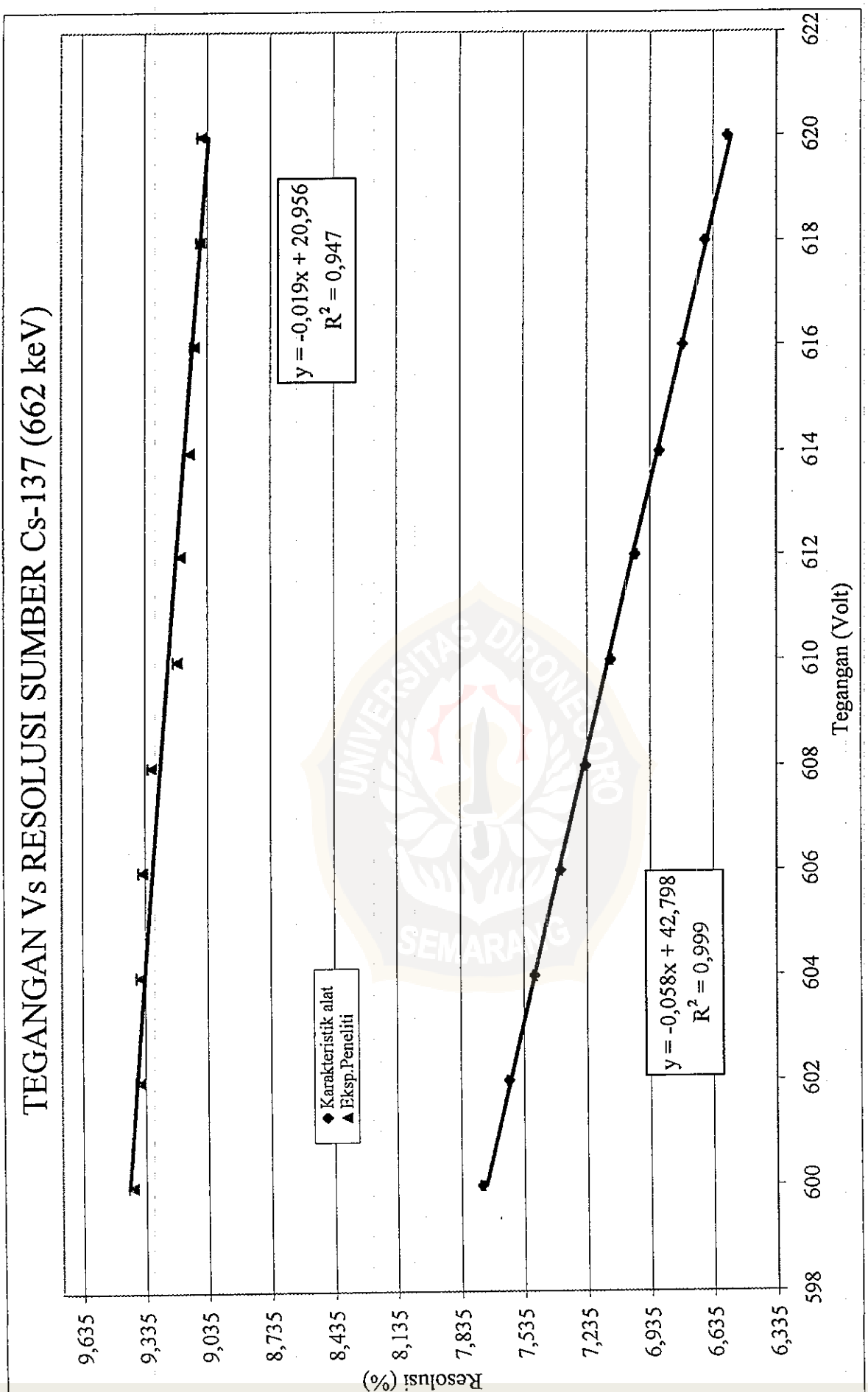


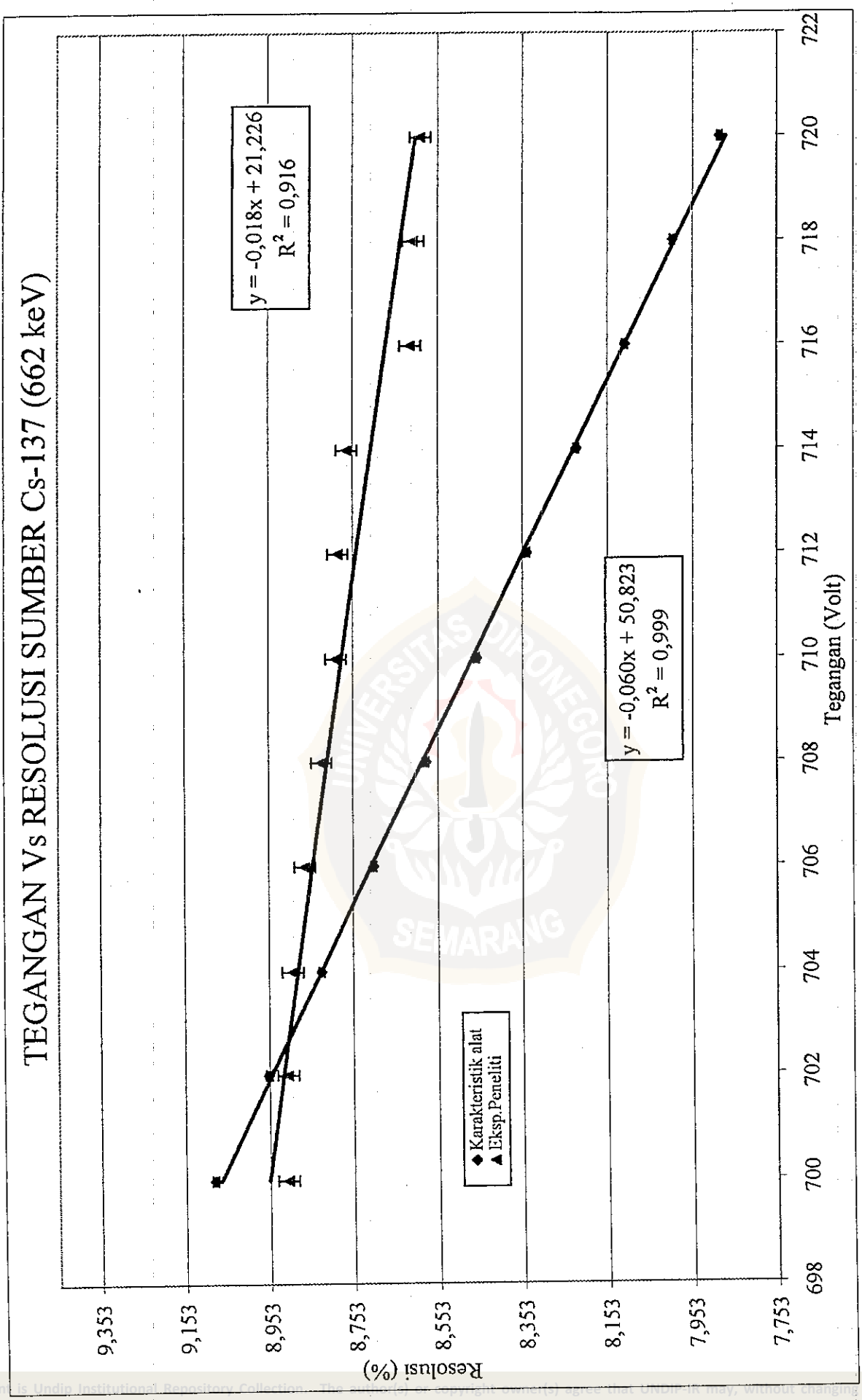


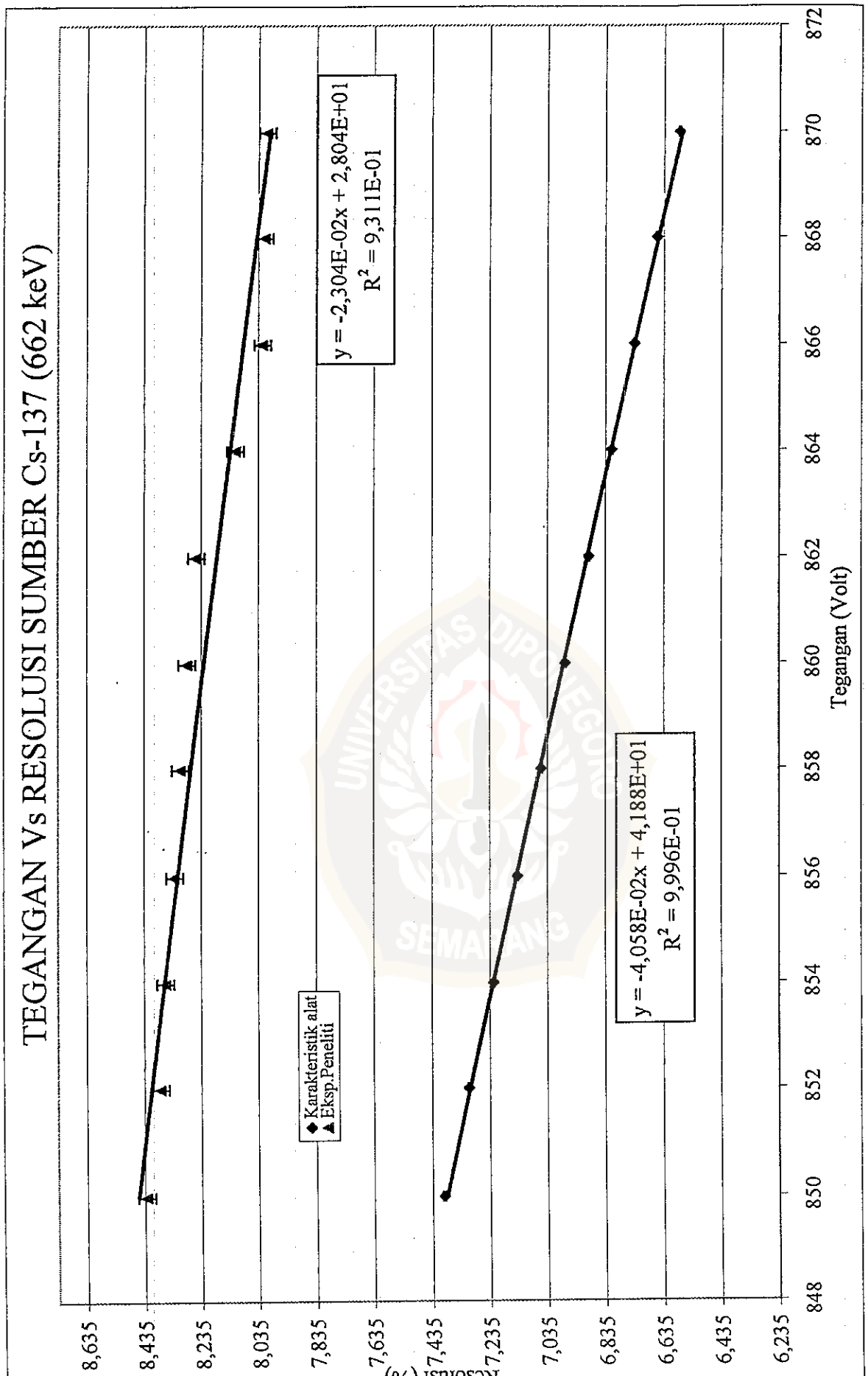


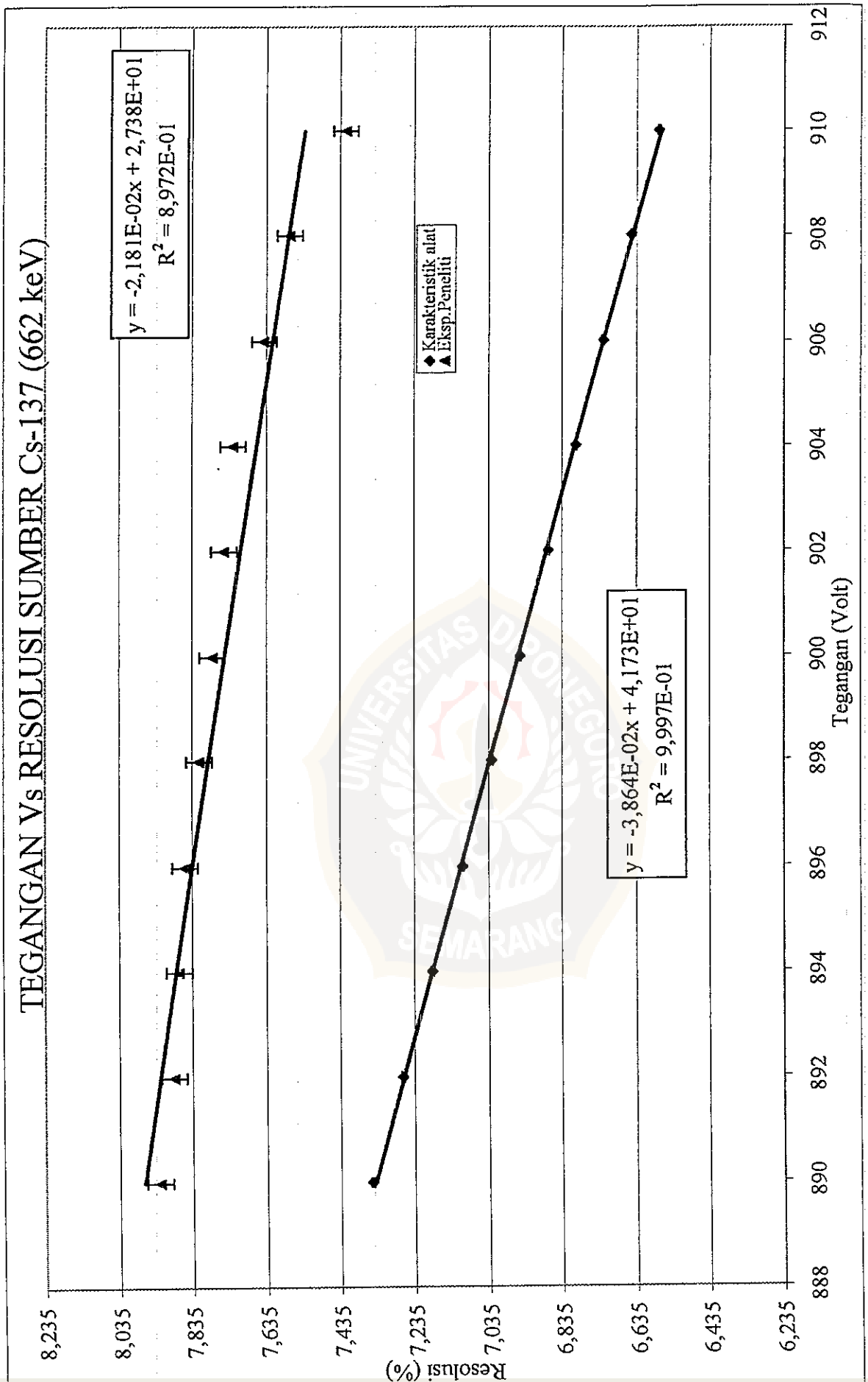


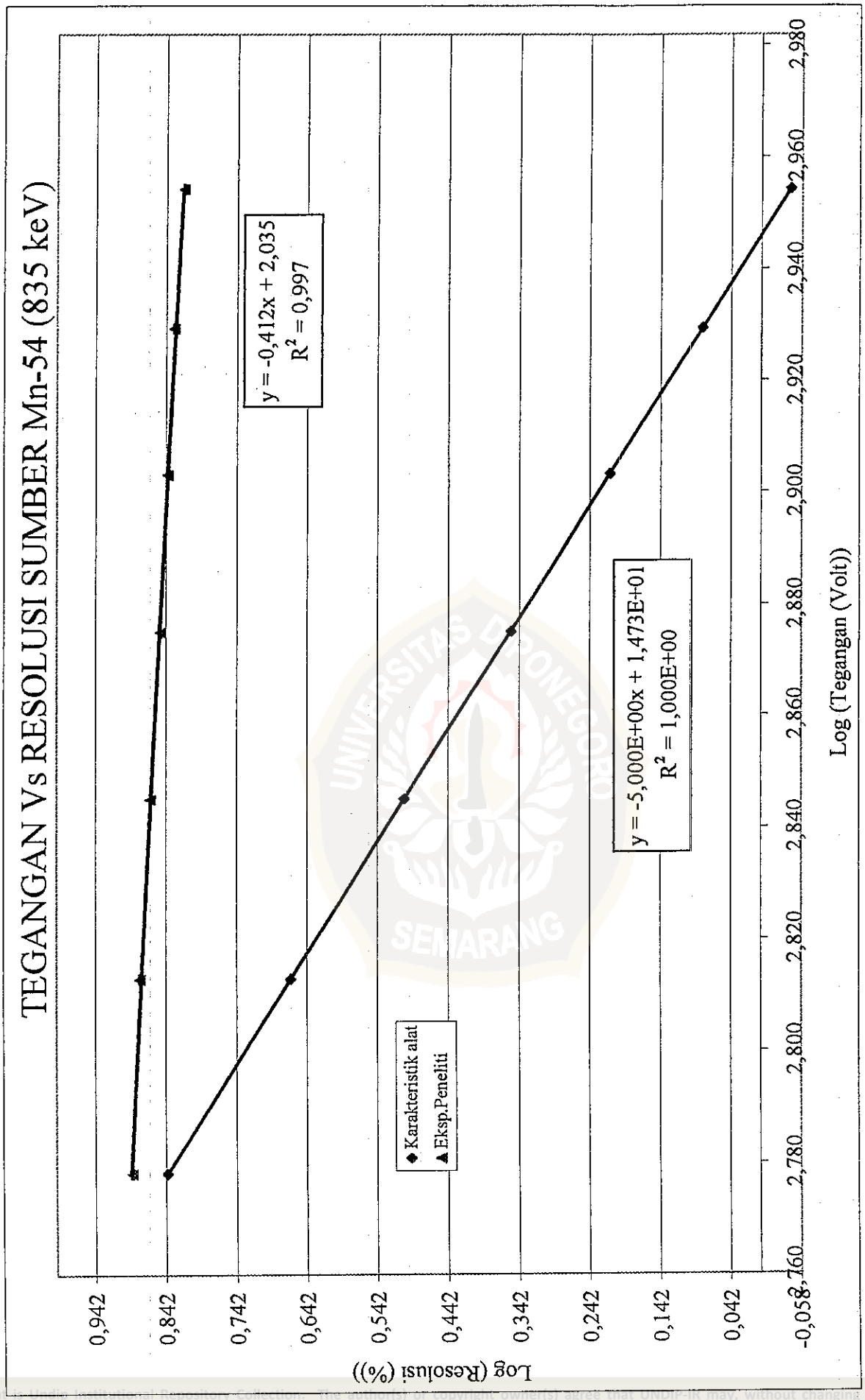


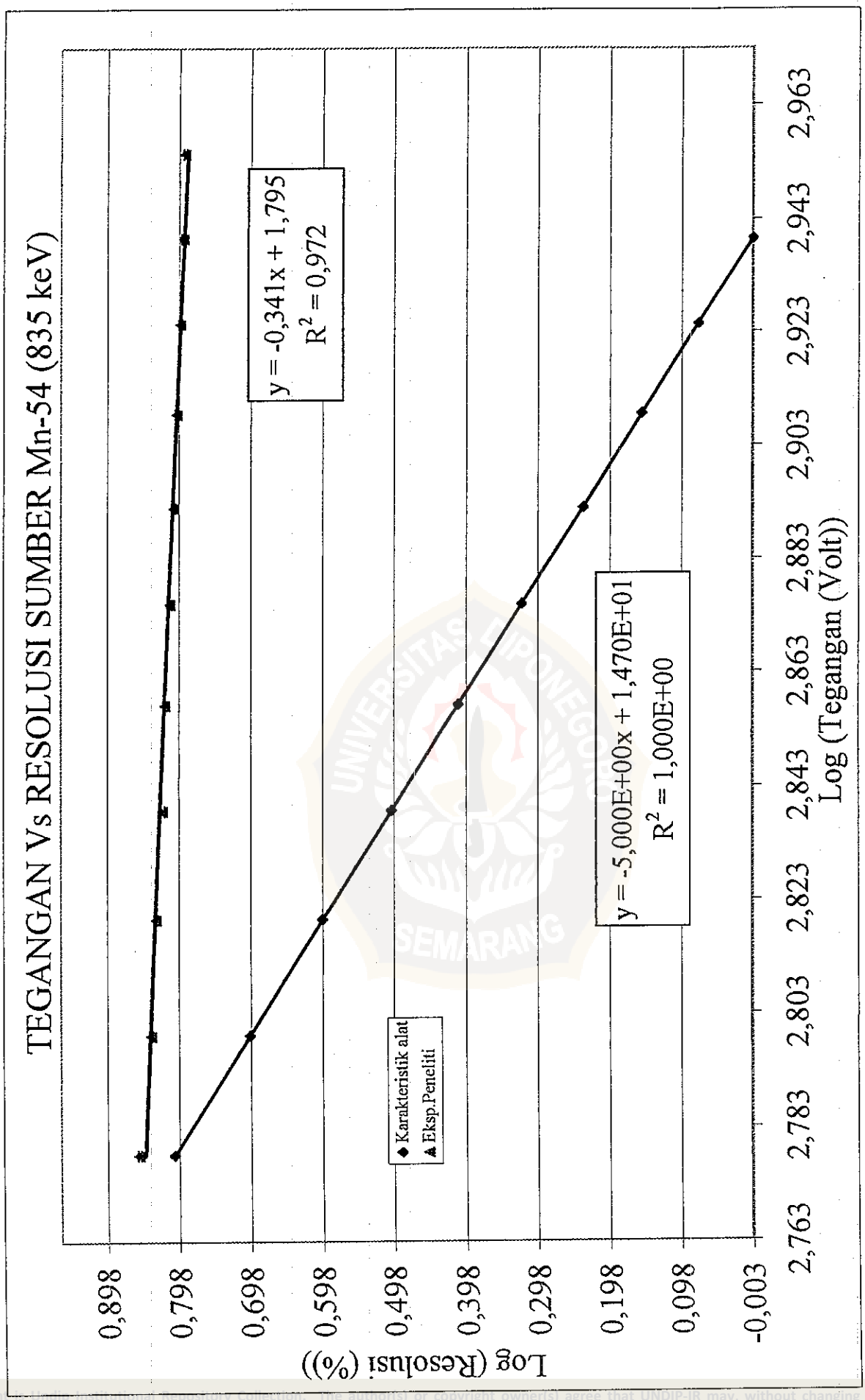


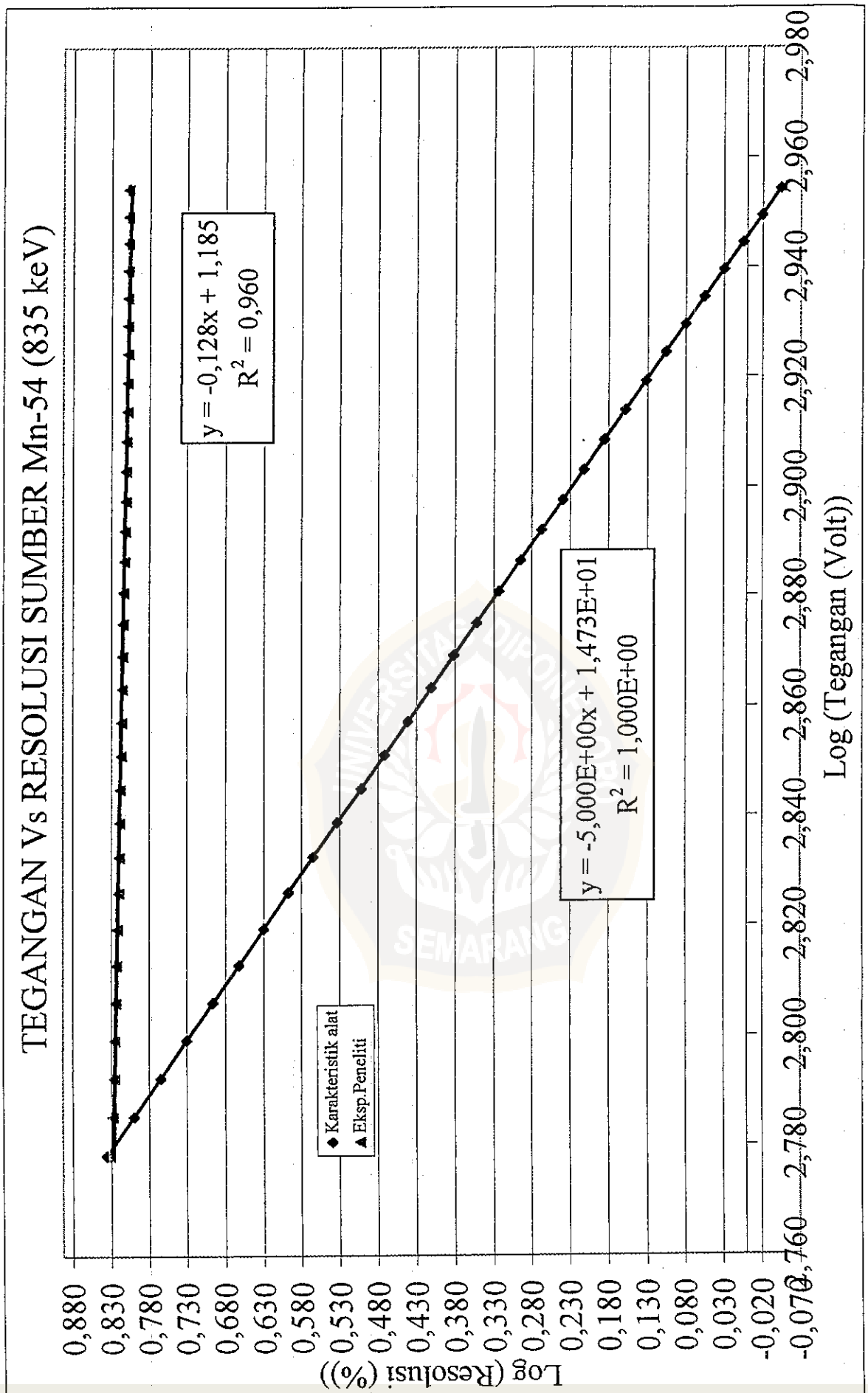


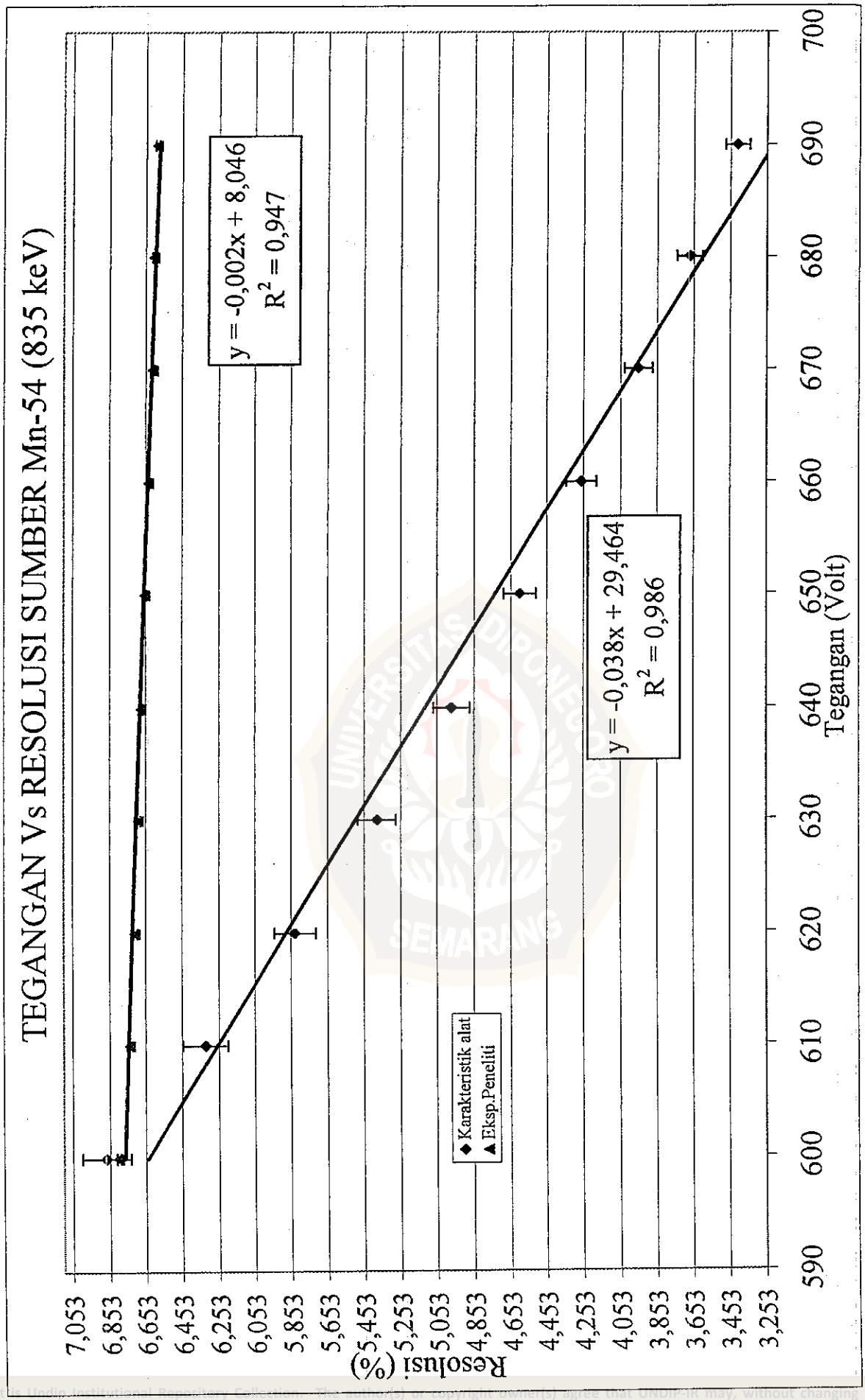


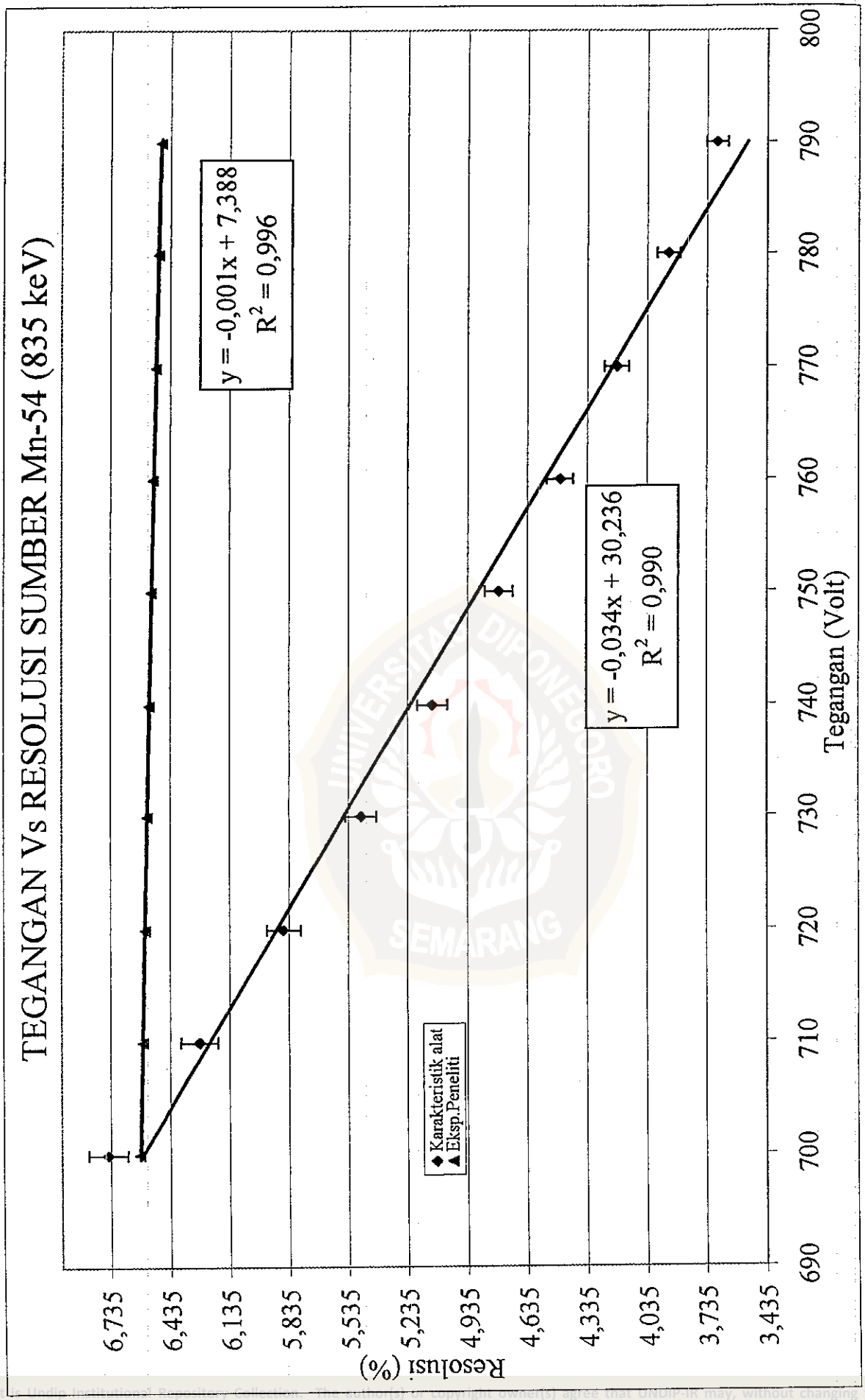


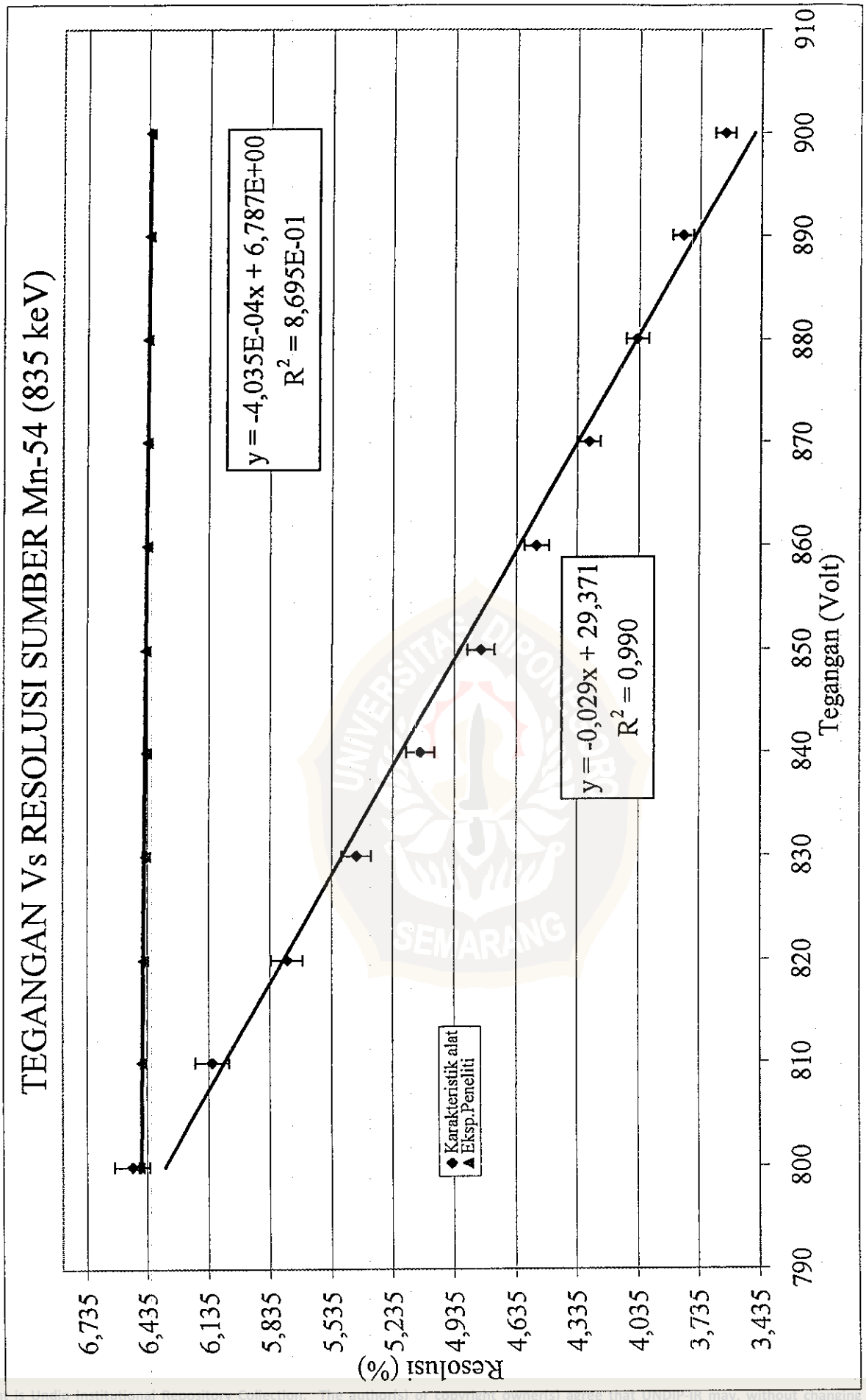


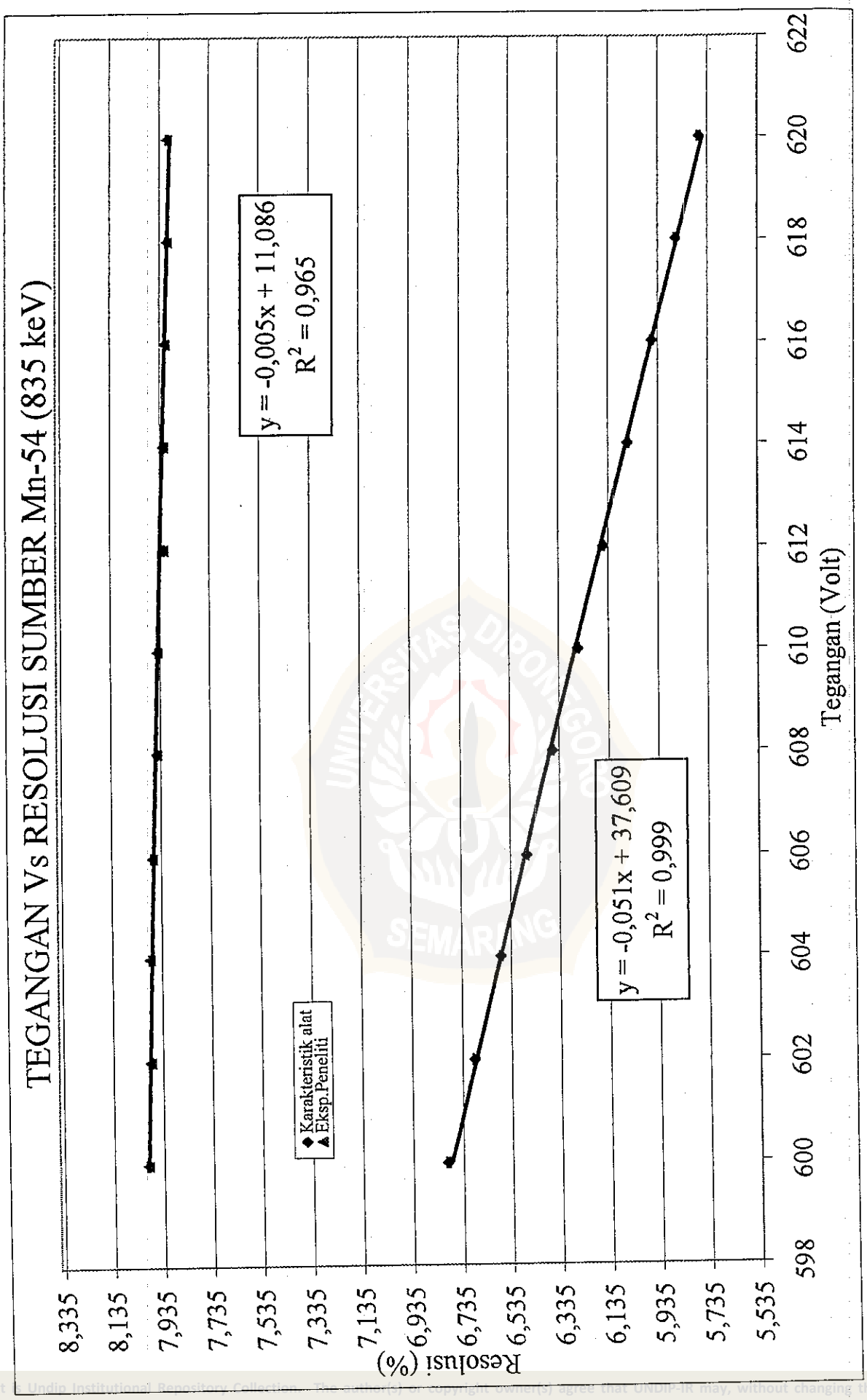


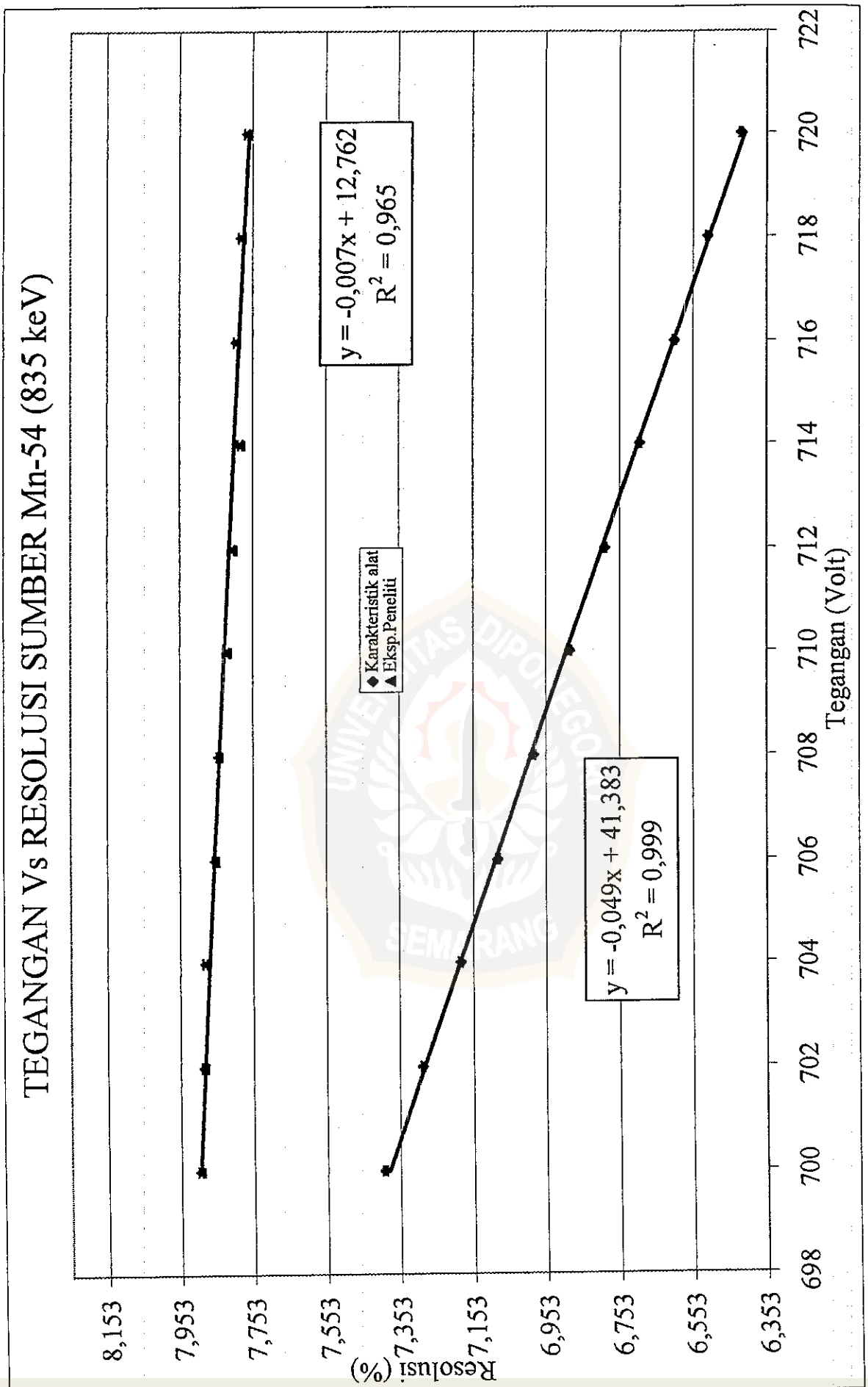


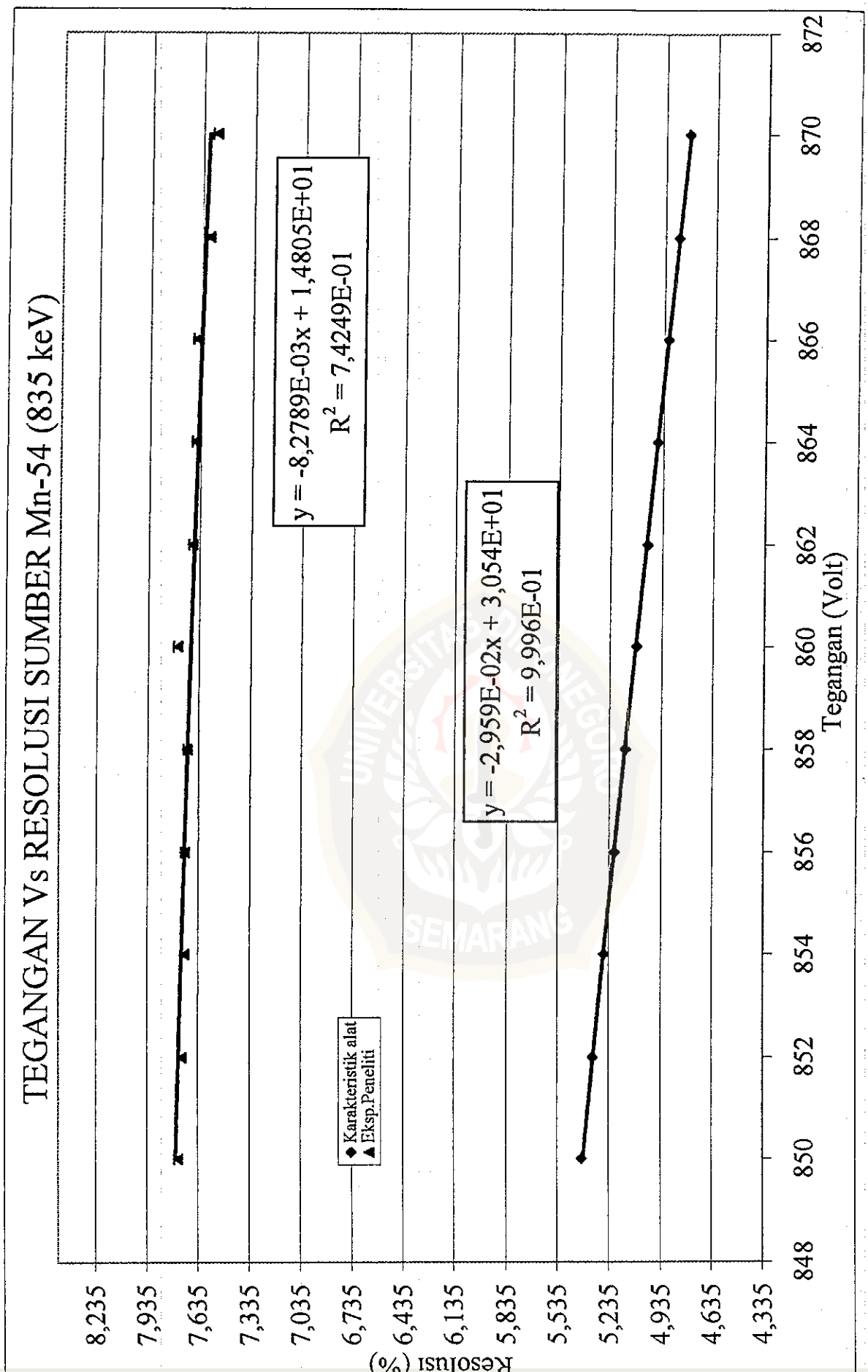


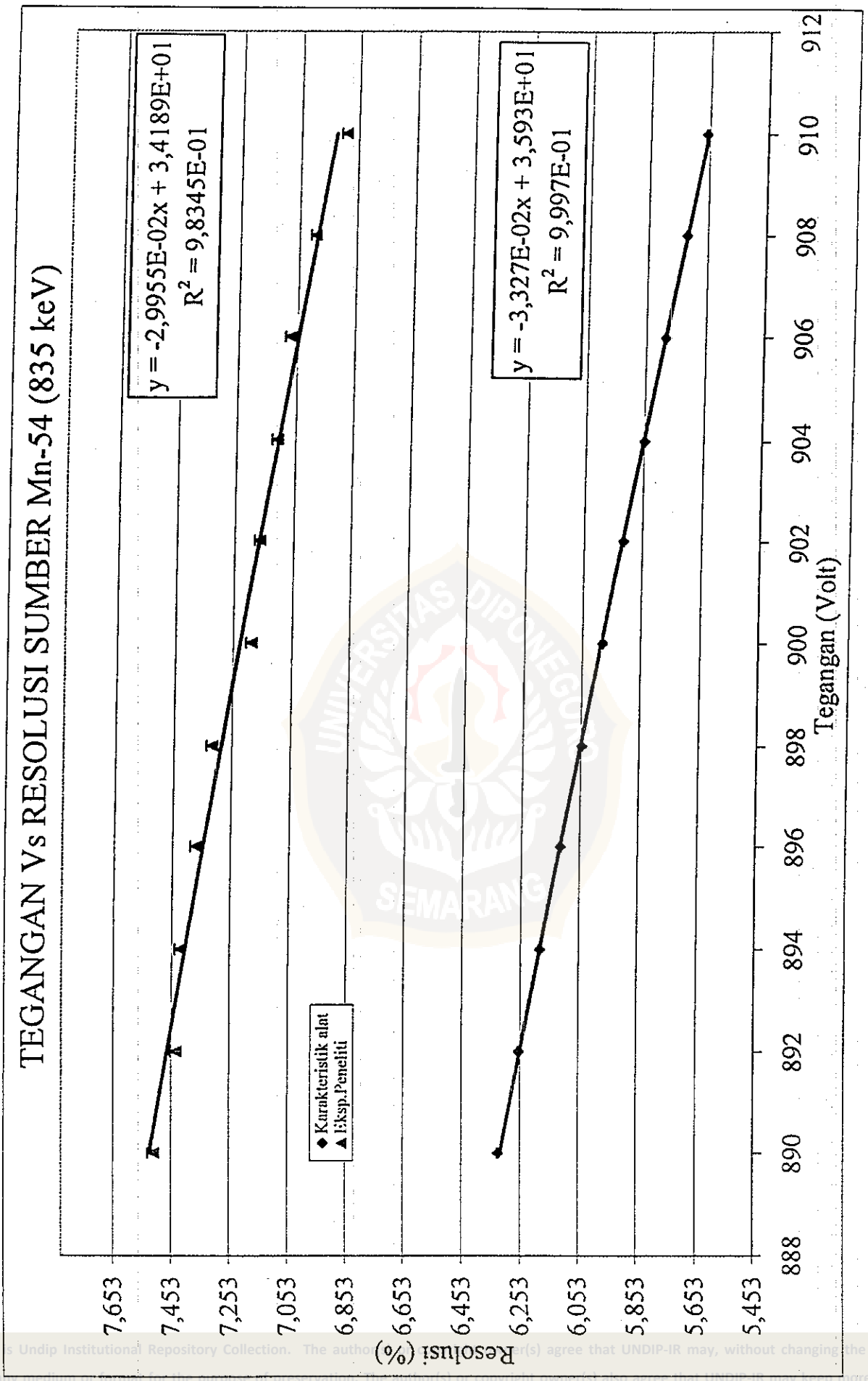












LAMPIRAN D

Daftar Analisa Varians

DAFTAR ANALISA VARIANS REGRESI LINEAR SEDERHANA

(ANAVA)

Sumber Varians	dk	JK	KT	F
Total	n	ΣY^2	ΣY^2	
Koef. (a)	1	JK (a)	JK (a)	S^2_{Reg}/S^2_{Sis}
Reg. (b| a)	1	JK (b| a)	S^2_{Reg}= JK(b| a)	
Sisa	n-2	JK (S)	S^2_{Sis}= JK(S)/n-2	

dengan

$JK(T) = \Sigma Y^2$, $JK(a) = (\Sigma Y)^2/n$, $JK(b|a) = b.(\Sigma xy - (\Sigma x).(\Sigma y)/n)$

$JK(s) = JK(T) - JK(a) - JK(b|a)$

Untuk kepercayaan 0,05; jika $F_{hit} > F_{tabel}$ maka hipotesa Ho ditolak dan H_1 diterima sehingga persamaan tersebut sangat berarti. Dengan demikian koefisien arah regresi (b) sangat berarti/signifikan dan taraf siginifikan 95 %.

HIPOTESA UNTUK SUMBER Cs^{137}(662 keV)

Perubahan tegangan 50 V

a). Karakteristik alat

Sumber Varians	dk	JK	KT	F
Total	7	2,190		
Koef. (a)	1	1,589		1001666667
Reg. (b| a)	1	0,601	0,601	
Sisa	5	3,00E-09	6,00E-10	

$F_{tabel} = 6,61$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan $Y= aX^b$ sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

b). Eksperimen peneliti

Sumber Varians	dk	JK	KT	F
Total	7	5,671		
Koef. (a)	1	5,667		828,329
Reg. (b| a)	1	0,004	0,004	
Sisa	5	2,414E-05	4,829E-06	

$F_{tabel} = 6,61$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan $Y= aX^b$ sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

Perubahan 30 V

a). Karakteristik alat

Sumber Varians	dk	JK	KT	F
Total	11	2,881		
Koef. (a)	1	2,032		-1297768267
Reg. (b| a)	1	0,849	0,849	
Sisa	9	-5,888E-09	-6,542E-10	

$F_{tabel} = 5,12$; $-F_{hit} > -F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan $Y= aX^b$ sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

b). Eksperimen peneliti

Sumber Varians	dk	JK	KT	F
Total	11	8,888		
Koef. (a)	1	8,879		1605,136
Reg. (b| a)	1	0,008	0,008	
Sisa	9	4,486E-05	4,984E-06	

$F_{tabel} = 6{,}61$, $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan $Y = aX^b$ sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

Perubahan 10 V

a). Karakteristik alat

Sumber Varians	dk	JK	KT	F
Total	31	8,526		
Koef. (a)	1	6,404		1176372712
Reg. (b| a)	1	2,121	2,121	
Sisa	29	5,229E-08	1,803E-09	

$F_{tabel} = 4{,}18$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan $Y = aX^b$ sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

b). Eksperimen peneliti

Sumber Varians	dk	JK	KT	F
Total	31	23,923		
Koef. (a)	1	23,917		1076,879
Reg. (b| a)	1	5,631E-03	5,631E-03	
Sisa	29	1,516E-04	5,229E-06	

$F_{tabel} = 4,18$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan $Y= aX^b$ sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

Perubahan 10 V

a). Karakteristik alat

Sumber Varians	dk	JK	KT	F
Total	10	379,997		
Koef. (a)	1	361,986		573,032
Reg. (b| a)	1	17,764	17,764	
Sisa	8	0,247	0,031	

$F_{tabel} = 5,32$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan $Y= a+bX$ sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

b). Eksperimen peneliti

Sumber Varians	dk	JK	KT	F
Total	10	617,924		
Koef. (a)	1	617,748		458,667
Reg. (b| a)	1	0,172	0,172	
Sisa	8	0,003	3,75E-04	

$F_{tabel} = 5,32$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a +bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

Perubahan 10 V

a). Karakteristik alat

Sumber Varians	dk	JK	KT	F
Total	10	356,758		
Koef. (a)	1	343,942		768,727
Reg. (b| a)	1	12,684	12,684	
Sisa	8	0,132	0,0165	

$F_{tabel} = 5,32$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a+bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

b). Eksperimen peneliti

Sumber Varians	dk	JK	KT	F
Total	10	566,596		
Koef. (a)	1	566,542		1377,697
Reg. (b| a)	1	0,053	0,053	
Sisa	8	3,078E-04	3,847E-05	

$F_{tabel} = 5,32$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a +bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

Perubahan 10 V

a). Karakteristik alat

Sumber Varians	dk	JK	KT	F
Total	11	357,703		
Koef. (a)	1	345,708		920,775
Reg. (b| a)	1	11,878	11,878	
Sisa	9	0,116	0,0129	

$F_{tabel} = 5,12$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a+bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

b). Eksperimen peneliti

Sumber Varians	dk	JK	KT	F
Total	11	589,601		
Koef. (a)	1	589,582		72,007
Reg. (b| a)	1	0,016	0,016	
Sisa	9	0,002	2,222E-04	

$F_{tabel} = 5,12$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a +bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

Perubahan 2 V

a). Karakteristik alat

Sumber Varians	dk	JK	KT	F
Total	11	561,434		
Koef. (a)	1	559,928		13537,353
Reg. (b| a)	1	1,504	1,504	
Sisa	9	0,001	1,111E-04	

$F_{tabel} = 5,12$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a+bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

b). Eksperimen peneliti

Sumber Varians	dk	JK	KT	F
Total	11	935,947		
Koef. (a)	1	935,774		162
Reg. (b| a)	1	0,162	0,162	
Sisa	9	0,009	1E-03	

$F_{tabel} = 5,12$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a +bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

Perubahan 2 V

a). Karakteristik alat

Sumber Varians	dk	JK	KT	F
Total	11	791,084		
Koef. (a)	1	789,518		16159,323
Reg. (b| a)	1	1,566	1,566	
Sisa	9	8,722E-04	9,691E-05	

$F_{tabel} = 5,12$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a+bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

b). Eksperimen peneliti

Sumber Varians	dk	JK	KT	F
Total	11	848,241		
Koef. (a)	1	848,094		101,275
Reg. (b| a)	1	0,135	0,135	
Sisa	9	0,012	1,333E-03	

$F_{tabel} = 5,12$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a +bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

Perubahan 2 V

a). Karakteristik alat

Sumber Varians	dk	JK	KT	F
Total	11	536,761		
Koef. (a)	1	536,036		23683,349
Reg. (b| a)	1	0,724	0,724	
Sisa	9	2,751E-04	3,057E-05	

$F_{tabel} = 5,12$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a+bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

b). Eksperimen peneliti

Sumber Varians	dk	JK	KT	F
Total	11	744,859		
Koef. (a)	1	744,607		123,411
Reg. (b| a)	1	0,233	0,233	
Sisa	9	0,017	1,888E-03	

$F_{tabel} = 5,12$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a +bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

Perubahan 2 V

a). Karakteristik alat

Sumber Varians	dk	JK	KT	F
Total	11	532,812		
Koef. (a)	1	532,156		25968,379
Reg. (b| a)	1	0,657	0,657	
Sisa	9	2,277E-04	2,53E-05	

$F_{tabel} = 5,12$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a+bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

b). Eksperimen peneliti

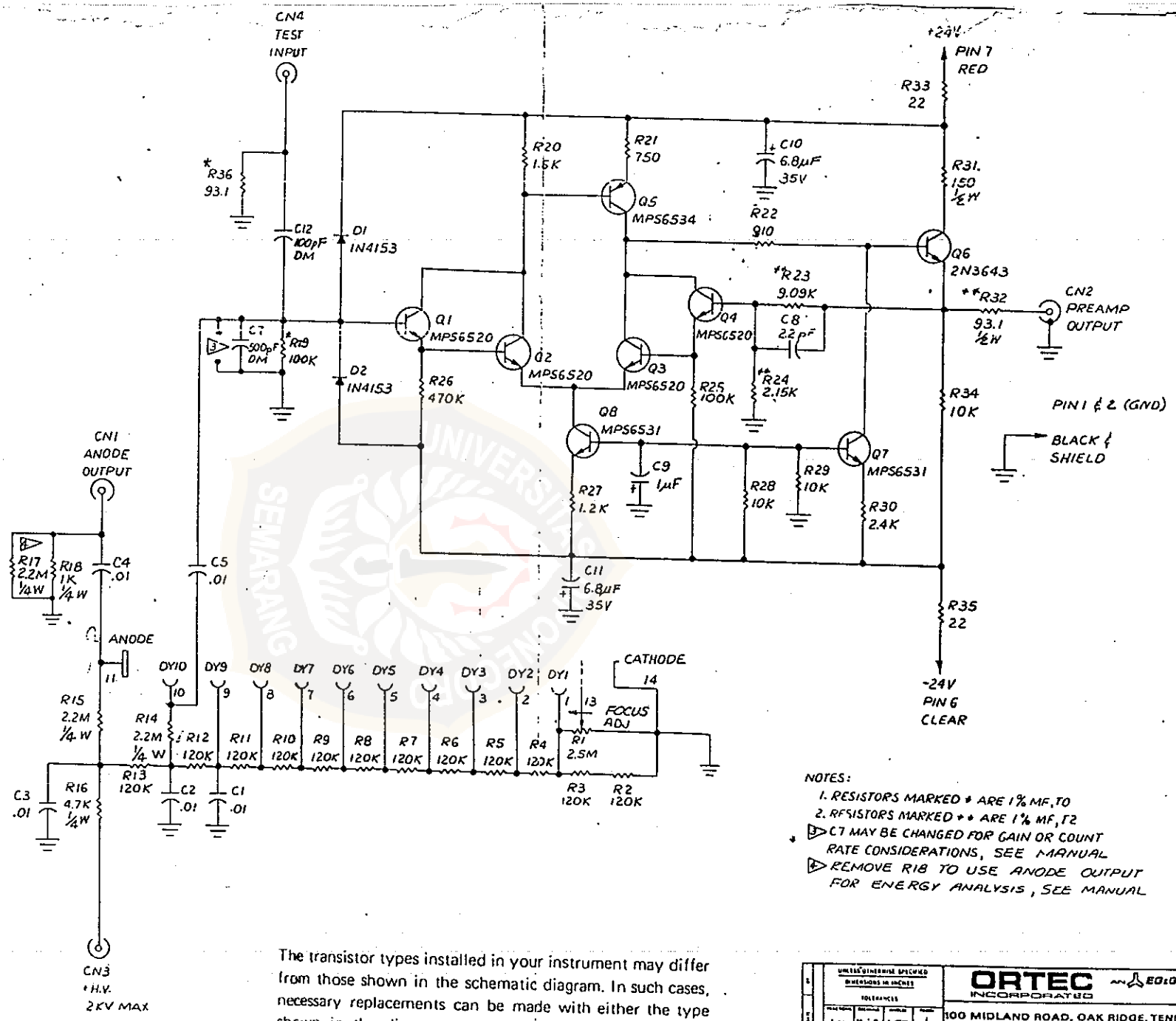
Sumber Varians	dk	JK	KT	F
Total	11	660,895		
Koef. (a)	1	660,662		78,365
Reg. (b| a)	1	0,209	0,209	
Sisa	9	0,024	2,667E-03	

$F_{tabel} = 5,12$; $F_{hit} > F_{tabel}$

Kesimpulan : Ho ditolak H_1 diterima sehingga persamaan Y= a +bX sangat berarti/nyata dengan demikian koefisien arah regresi b sangat signifikan.

LAMPIRAN E

Skema Rangkaian PMT



NOTES:

1. RESISTORS MARKED * ARE 1% MF, T0
2. RESISTORS MARKED ** ARE 1% MF, T2
3. C7 MAY BE CHANGED FOR GAIN OR COUNT RATE CONSIDERATIONS, SEE MANUAL
4. REMOVE R18 TO USE ANODE OUTPUT FOR ENERGY ANALYSIS, SEE MANUAL

The transistor types installed in your instrument may differ from those shown in the schematic diagram. In such cases, necessary replacements can be made with either the type shown in the diagram or the type actually used in the instrument.

ORTEC
INCORPORATED
AN EG&G COMPANY
100 MIDLAND ROAD, OAK RIDGE, TENNESSEE 37830
MODEL 276