

LAMPIRAN I

1. Program Utama

```
N=input('masukkan banyak titik kekisi N = ');
Nx=Ny=N;
spin=zeros(Ny,Nx);
Td=input('masukkan suhu = ');
mcs=100;
T=0;
k=1;
d=input('masukkan delta T= ');
J=input('masukkan nilai J= ');
B=input('masukkan nilai B= ');
l=(Td-T)/d;
ET=zeros(1,1);
MT=zeros(1,1);
c=zeros(1,1);

for f=1:l
    T=T+d;
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c(f)=T;
    for i=1:2:Ny
        for j=1:2:Nx
            spin(i,j)=1;
            spin(i,j+1)=-1;
            spin(i+1,j)=-1;
            spin(i+1,j+1)=1;
        end
    end

[M0,E0]=second(spin,Ny,Nx,J,B);

E=E0;
M=M0;

%Monte Carlo random posisi

Ekum=0;
Mkum=0;

for a=1:mcs
    for k=1:Ny
        i=k;
        for l=1:Nx
            x=1+round((Nx-1)*rand);
            j=x;

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spin(i, j)=-spin(i, j);
[Mt,Et]=second(spin,Ny,Nx, J, B);
dE=Et-E;
w=e.^(-dE/kT);
    if dE<=0 ||rand<=w
        E=Et;
        M=Mt;
    else
        E=E;
        M=M;
        spin(i, j)=-spin(i, j);
    end
end
end
Ekum=Ekum+E;
Mkum=Mkum+M;

end

ET(f)=Ekum/(mcs*Ny*Nx);
MT(f)=Mkum/(mcs*Ny*Nx);

end

plot(c,MT,'o') %Untuk grafik magnetisasi terhadap suhu.
plot(c,ET,'o') %Untuk grafik energi terhadap suhu.

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2. Program Subroutine

```
function [M,E]=second(spin,Ny,Nx,J,B)

E=0;

M=0;

for i=1:Ny
    for j=1:Nx
        if i==1
            atas=spin(Ny,j);
        else
            atas=spin(i-1,j);
        end

        if i==Ny
            bawah=spin(1,j);
        else
            bawah=spin(i+1,j);
        end

        if j==1
            kiri=spin(i,Nx);
        else
            kiri=spin(i,j-1);
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        end

        if j==Nx
            kanan=spin(i,1);
        else
            kanan=spin(i,j+1);
        end

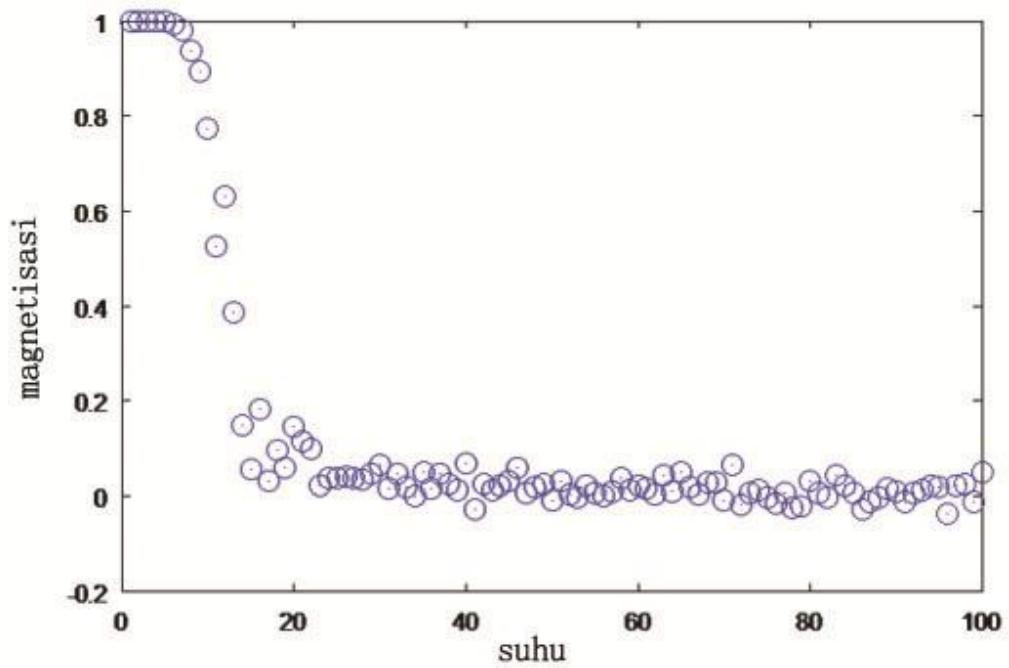
E=E+2*J*(-spin(i,j)*(kanan+kiri+atas+bawah))-B*(spin(i));
    end
end

%menghitung magnetisasi
for i=1:Ny
    for j=1:Nx
        M=M+spin(i,j);
    end
end

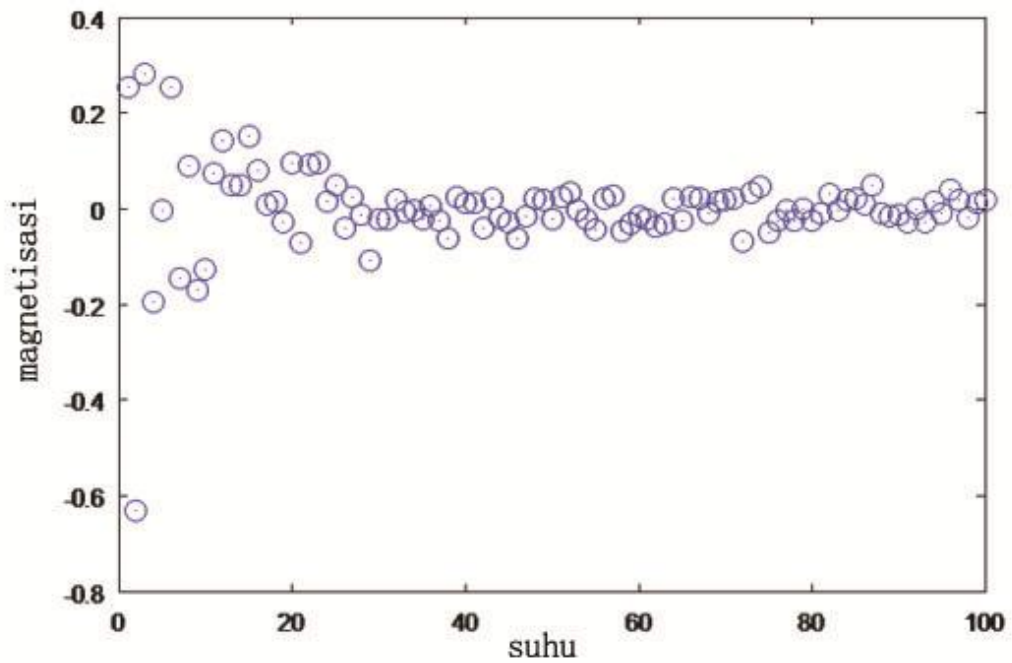
end

```

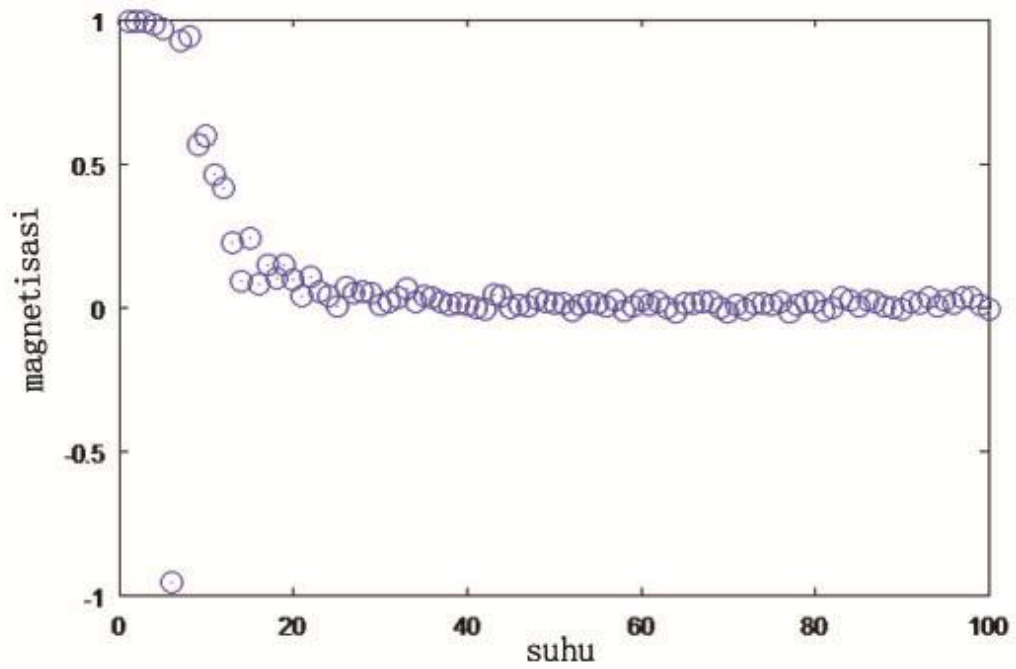
LAMPIRAN II



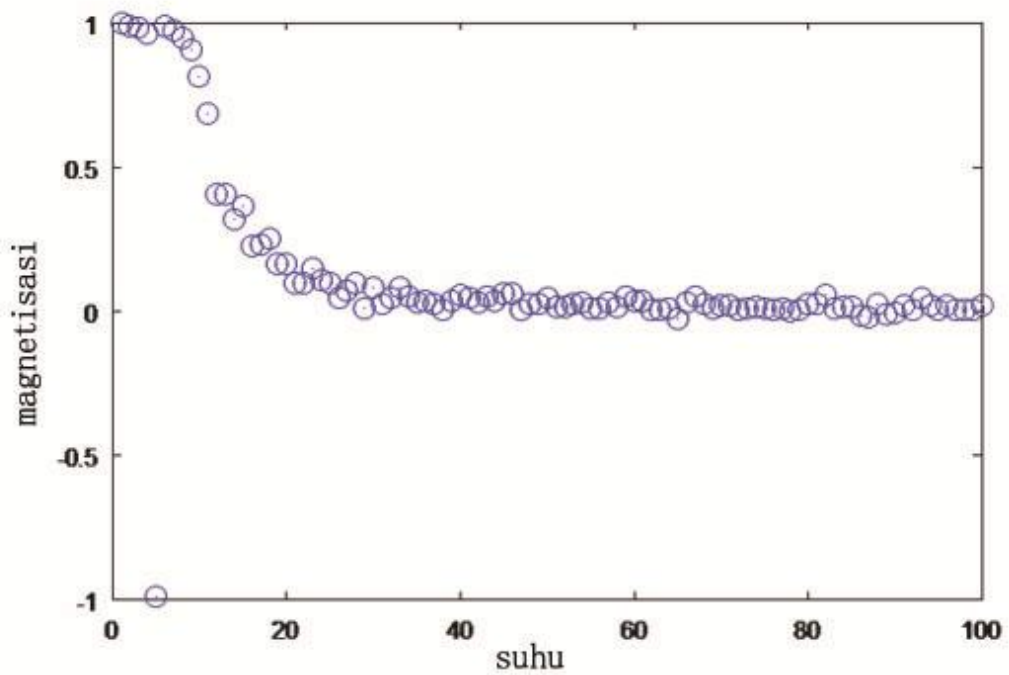
Grafik magnetisasi bahan ferromagnet terhadap suhu.



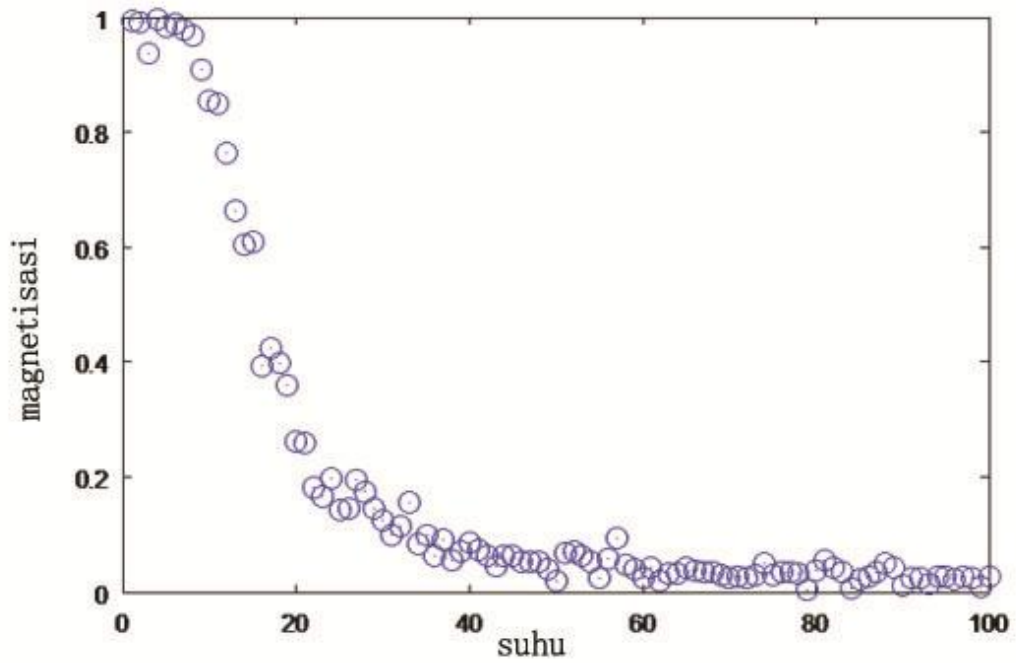
Grafik hubungan magnetisasi terhadap suhu pada bahan antiferromagnet tanpa pengaruh medan magnet luar.



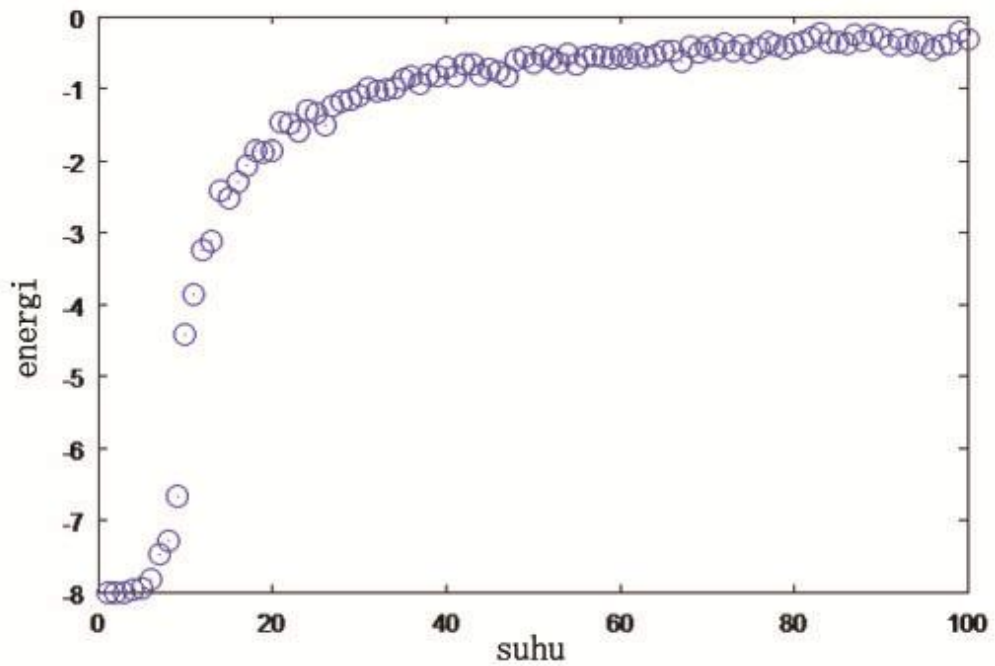
Grafik hubungan magnetisasi terhadap suhu pada bahan antiferromagnet, dengan $B = 0,5$.



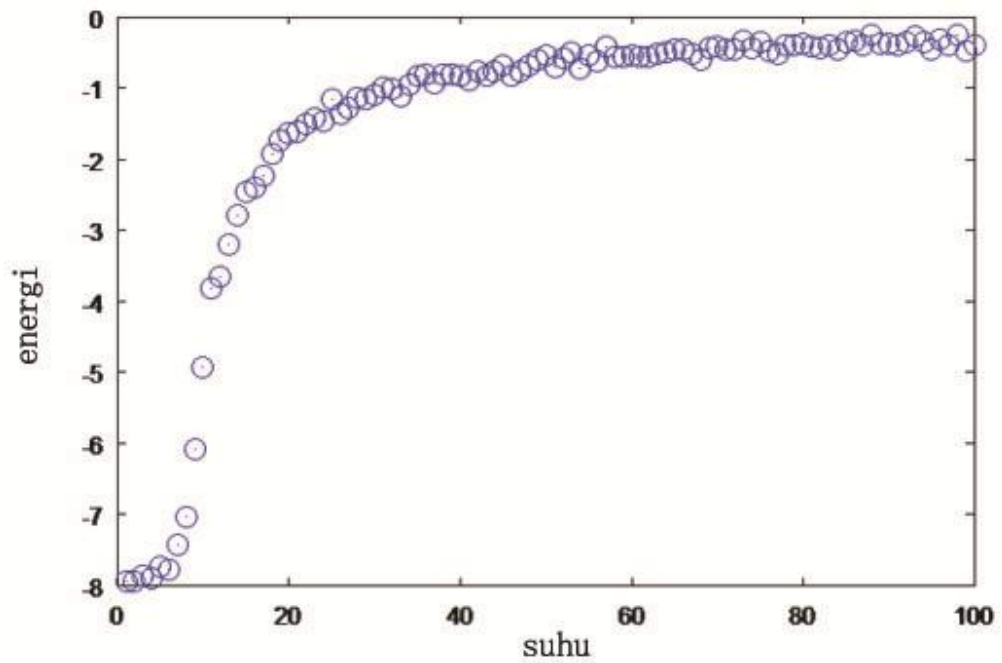
Grafik hubungan magnetisasi terhadap suhu pada bahan antiferromagnet, dengan $B = 1$.



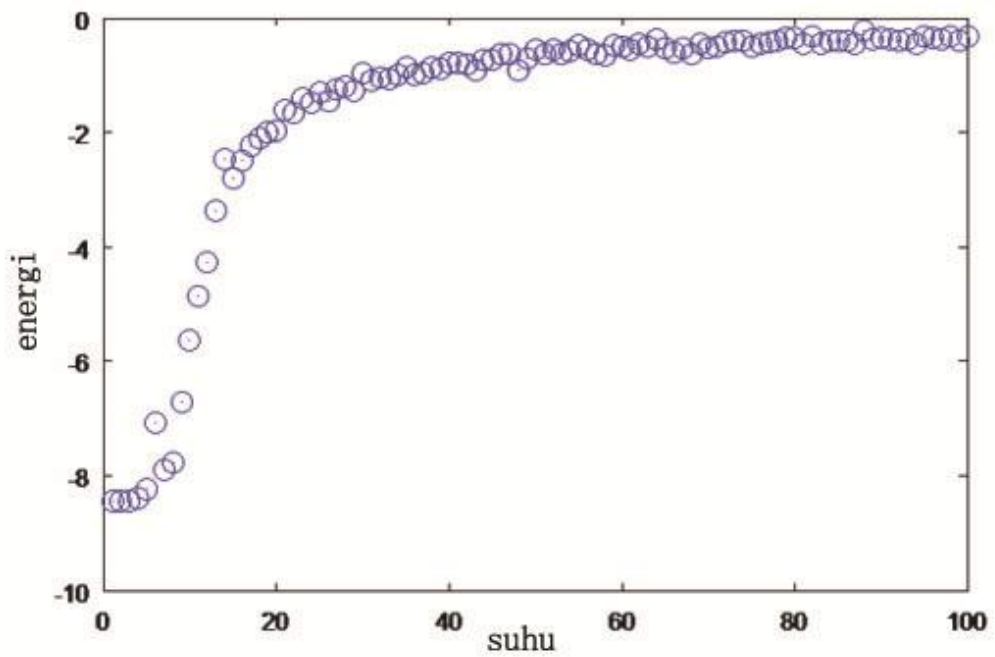
Grafik hubungan magnetisasi terhadap suhu pada bahan antiferromagnet, dengan $B = 2$.



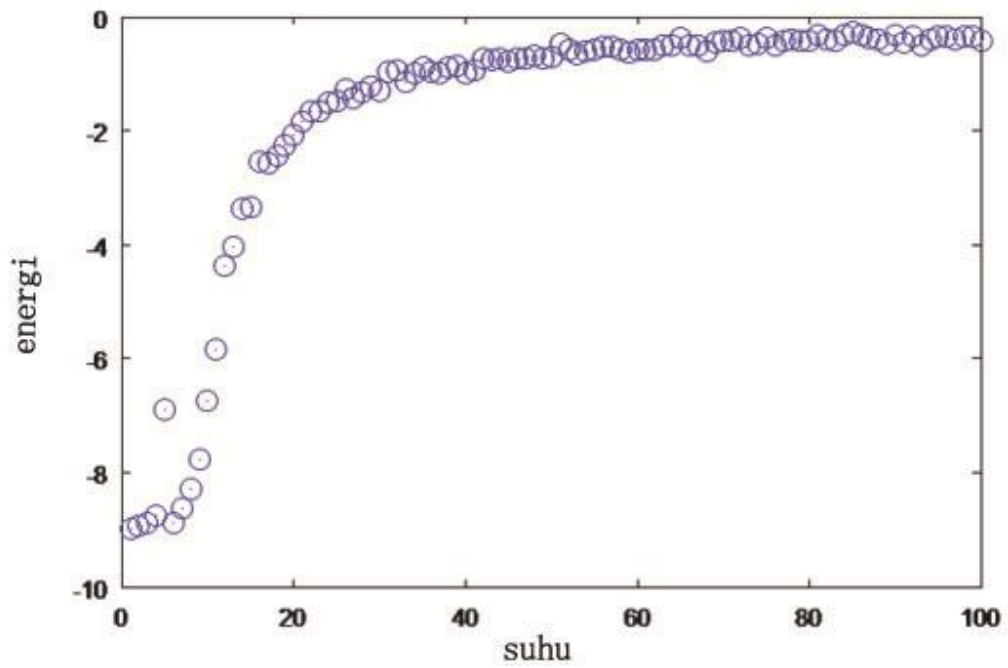
Grafik magnetisasi bahan ferromagnet terhadap suhu.



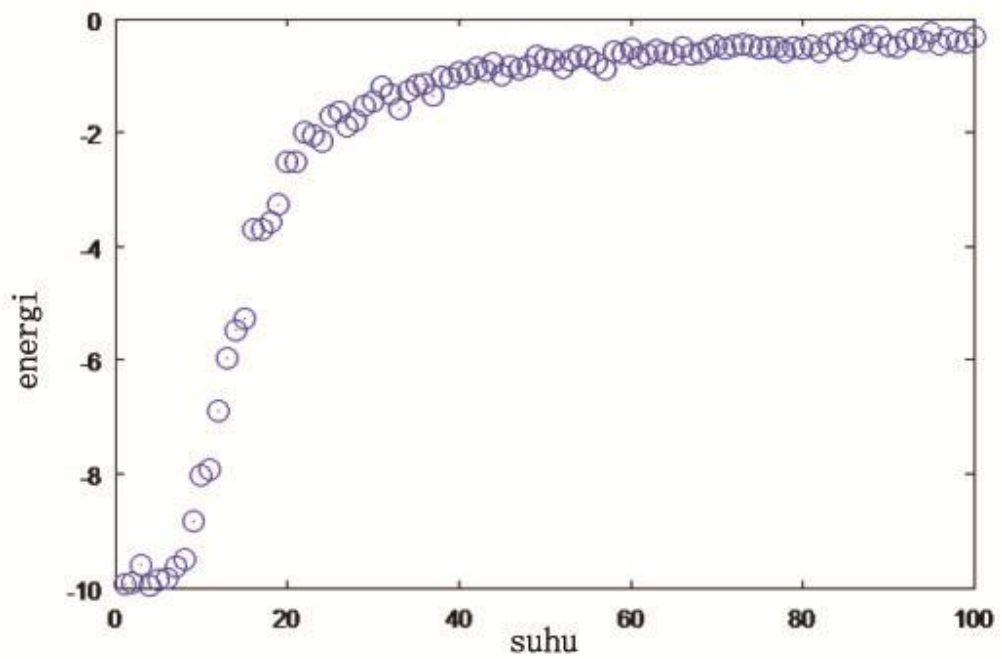
Grafik hubungan energi terhadap suhu pada bahan antiferromagnet tanpa pengaruh medan magnet luar.



Grafik hubungan energi terhadap suhu pada bahan antiferromagnet, dengan $B = 0,5$.



Grafik hubungan energi terhadap suhu pada bahan antiferromagnet, dengan $B = 1$.



Grafik hubungan energi terhadap suhu pada bahan antiferromagnet, dengan $B = 2$.

1. Tanpa Pengaruh Medan Magnet Luar.

T	MT	m	ET	m
1	0.2453	-	-7.8933	-
2	-0.6250	-0.8703	-7.9253	-0.0320
3	0.2552	0.8802	-7.9520	-0.0267
4	0.0013	-0.2540	-7.8880	0.0640
5	-0.1998	-0.2010	-7.7707	0.1173
6	0.2453	0.4451	-7.8471	-0.0764
7	-0.1748	-0.4201	-7.4293	0.4178
8	0.1653	0.3401	-6.5173	0.9120
9	-0.1797	-0.3450	-5.7956	0.7218
10	-0.1672	0.0124	-4.9067	0.8889
11	0.1603	0.3275	-4.0053	0.9013
12	0.0606	-0.0997	-3.5289	0.4764
13	-0.0102	-0.0708	-3.0311	0.4978
14	-0.0416	-0.0314	-2.8871	0.1440
15	-0.0144	0.0272	-2.4996	0.3876
16	0.0058	0.0202	-2.2471	0.2525
17	0.0259	0.0202	-2.0107	0.2364
18	-0.0042	-0.0302	-2.1316	-0.1209
19	-0.0108	-0.0066	-1.7511	0.3805
20	0.0322	0.0430	-1.7298	0.0213
21	-0.0353	-0.0675	-1.5982	0.1316
22	0.0273	0.0627	-1.5289	0.0693
23	0.0066	-0.0208	-1.5609	-0.0320
24	0.0103	0.0038	-1.3244	0.2365
25	-0.0197	-0.0300	-1.3422	-0.0178
26	0.0350	0.0547	-1.2853	0.0569
27	0.0012	-0.0338	-1.2302	0.0551
28	-0.0197	-0.0209	-1.0436	0.1867
29	0.0045	0.0242	-1.1093	-0.0658
30	-0.0184	-0.0230	-1.1289	-0.0196
31	-0.0086	0.0099	-1.1804	-0.0516
32	-0.0077	0.0009	-0.9547	0.2258
33	-0.0070	0.0006	-1.0382	-0.0835
34	0.0047	0.0117	-1.0258	0.0124
35	-0.0070	-0.0117	-0.9564	0.0693
36	0.0161	0.0231	-0.9102	0.0462
37	-0.0142	-0.0303	-0.8800	0.0302

38	0.0081	0.0224	-0.8444	0.0356
39	0.0180	0.0098	-0.7271	0.1173
40	-0.0197	-0.0377	-0.9387	-0.2116
41	-0.0094	0.0103	-0.7822	0.1565
42	0.0078	0.0172	-0.8018	-0.0196
43	-0.0108	-0.0186	-0.8480	-0.0462
44	0.0014	0.0122	-0.6453	-0.5991
45	-0.0089	-0.0103	-0.5956	0.0498
46	-0.0058	0.0031	-0.6542	-0.0587
47	0.0227	0.0284	-0.6489	0.0053
48	-0.0027	-0.0253	-0.6684	-0.0196
49	0.0108	0.0134	-0.6222	0.0462
50	-0.0027	-0.0134	-0.7324	-0.1102
51	0.0222	0.0249	-0.6044	0.1280
52	-0.0144	-0.0366	-0.6204	-0.0160
53	0.0189	0.0333	-0.5671	0.0533
54	-0.0072	-0.0261	-0.6204	-0.0533
55	-0.0045	0.0027	-0.4676	0.1529
56	0.0034	0.0080	-0.5476	-0.0800
57	0.0000	-0.0034	-0.5707	-0.0231
58	0.0031	0.0031	-0.4551	0.1156
59	-0.0159	-0.0191	-0.5084	-0.0533
60	0.0097	0.0256	-0.6844	-0.1760
61	-0.0175	-0.0272	-0.5458	0.1387
62	0.0031	0.0206	-0.4000	0.1458
63	0.0227	0.0196	-0.4924	-0.0924
64	-0.0197	-0.0424	-0.4302	0.0622
65	0.0028	0.0225	-0.5369	-0.1067
66	-0.0261	-0.0289	-0.3982	0.1387
67	0.0066	0.0327	-0.5227	-0.1245
68	0.0005	-0.0061	-0.5191	0.0036
69	0.0163	0.0158	-0.4302	0.0889
70	0.0048	-0.0114	-0.5084	-0.0782
71	-0.0019	-0.0067	-0.4747	0.0338
72	0.0189	0.0208	-0.3520	0.1227
73	-0.0123	-0.0313	-0.3733	-0.0213
74	0.0075	0.0198	-0.4178	-0.0445
75	-0.0073	-0.0148	-0.4320	-0.0142
76	-0.0047	0.0027	-0.3236	0.1084
77	0.0044	0.0091	-0.4178	-0.0942
78	-0.0041	-0.0084	-0.2720	0.1458

79	0.0078	0.0119	-0.4302	-0.1582
80	-0.0044	-0.0122	-0.3538	0.0764
81	-0.0019	0.0025	-0.3804	-0.0267
82	0.0081	0.0100	-0.3947	-0.0142
83	0.0206	0.0125	-0.4089	-0.0142
84	-0.0041	-0.0247	-0.2524	0.1565
85	-0.0083	-0.0042	-0.2933	-0.0409
86	0.0088	0.0170	-0.3769	-0.0836
87	0.0033	-0.0055	-0.4089	-0.0320
88	-0.0138	-0.0170	-0.3058	0.1031
89	0.0014	0.0152	-0.3804	-0.0747
90	0.0166	0.0152	-0.4373	-0.0569
91	-0.0022	-0.0188	-0.3307	0.1067
92	-0.0011	0.0011	-0.4213	-0.0907
93	-0.0216	-0.0205	-0.4302	-0.0089
94	-0.0091	0.0125	-0.4444	-0.0142
95	-0.0284	-0.0194	-0.3022	0.1422
96	-0.0209	0.0075	-0.4409	-0.1387
97	0.0038	0.0247	-0.3556	0.0853
98	0.0023	-0.0014	-0.2916	0.0640
99	-0.0098	-0.0122	-0.2773	0.0142
100	0.0227	0.0325	-0.3609	-0.0836

14	0.3229	0.1716	-3.0574	0.3267
15	0.2518	-0.0711	-2.7979	0.2596
16	0.1740	-0.0778	-2.4337	0.3642
17	0.1596	-0.0144	-2.3038	0.1299
18	0.0747	-0.0849	-2.0818	0.2220
19	0.0558	-0.0189	-1.6528	0.4290
20	0.0758	0.0200	-1.7677	-0.1149
21	0.0551	-0.0207	-1.6240	0.1437
22	0.0356	-0.0196	-1.5093	0.1147
23	0.0289	-0.0067	-1.5291	-0.0198
24	0.0633	0.0344	-1.3668	0.1623
25	0.0400	-0.0233	-1.3836	-0.0168
26	0.0118	-0.0282	-1.2628	0.1208
27	0.0311	0.0193	-1.2387	0.0241
28	-0.0129	-0.0440	-1.1456	0.0931
29	0.0320	0.0449	-1.0631	0.0824
30	0.0513	0.0193	-1.1599	-0.0968
31	0.0436	-0.0078	-1.1827	-0.0228
32	0.0367	-0.0069	-1.2130	-0.0303
33	0.0122	-0.0244	-1.0283	0.1847
34	0.0144	0.0022	-0.9672	0.0611
35	0.0278	0.0133	-0.9828	-0.0156
36	0.0656	0.0378	-0.8719	0.1109
37	-0.0069	-0.0724	-0.8232	0.0487
38	0.0144	0.0213	-0.9174	-0.0942
39	0.0107	-0.0038	-0.8338	0.0837
40	0.0056	-0.0051	-0.8312	0.0026
41	0.0282	0.0227	-0.7626	0.0687
42	-0.0013	-0.0296	-0.7442	0.0183
43	0.0153	0.0167	-0.8343	-0.0901
44	0.0073	-0.0080	-0.7468	-0.6567
45	0.0298	0.0224	-0.8113	-0.0646
46	0.0302	0.0004	-0.7956	0.0158
47	0.0491	0.0189	-0.7428	0.0528
48	-0.0120	-0.0611	-0.6571	0.0857
49	0.0107	0.0227	-0.6827	-0.0256
50	-0.0062	-0.0169	-0.5231	0.1596
51	0.0549	0.0611	-0.6923	-0.1692
52	-0.0044	-0.0593	-0.5844	0.1079
53	0.0429	0.0473	-0.6046	-0.0201
54	0.0289	-0.0140	-0.5478	0.0568

2. Dengan $B = 0,5$.

T	MT	m	ET	m
1	0.9933	-	-8.4344	-
2	0.9898	-0.0036	-8.4131	0.0213
3	0.9940	0.0042	-8.4401	-0.0270
4	0.9902	-0.0038	-8.4133	0.0268
5	-0.9820	-1.9722	-7.3792	1.0341
6	0.9738	1.9558	-8.2433	-0.8641
7	-0.9396	-1.9133	-6.8582	1.3851
8	0.8778	1.8173	-7.5358	-0.6776
9	0.8053	-0.0725	-6.6320	0.9038
10	0.6380	-0.1673	-5.5723	1.0597
11	0.2691	-0.3689	-4.3266	1.2458
12	0.4389	0.1698	-4.0879	0.2387
13	0.1513	-0.2876	-3.3841	0.7038

55	0.0309	0.0020	-0.5914	-0.0437
56	0.0100	-0.0209	-0.5721	0.0193
57	-0.0104	-0.0204	-0.5868	-0.0147
58	-0.0071	0.0033	-0.4978	0.0890
59	0.0242	0.0313	-0.6077	-0.1099
60	0.0287	0.0044	-0.6117	-0.0040
61	0.0318	0.0031	-0.5794	0.0322
62	0.0260	-0.0058	-0.4059	0.1736
63	-0.0113	-0.0373	-0.4566	-0.0507
64	0.0213	0.0327	-0.5760	-0.1194
65	-0.0040	-0.0253	-0.4744	0.1016
66	-0.0007	0.0033	-0.4868	-0.0123
67	0.0320	0.0327	-0.5422	-0.0554
68	0.0340	0.0020	-0.4526	0.0897
69	0.0062	-0.0278	-0.4049	0.0477
70	0.0176	0.0113	-0.6114	-0.2066
71	0.0269	0.0093	-0.4792	0.1322
72	-0.0069	-0.0338	-0.5179	-0.0387
73	0.0211	0.0280	-0.4906	0.0273
74	0.0282	0.0071	-0.4017	0.0889
75	-0.0109	-0.0391	-0.4479	-0.0462
76	0.0224	0.0333	-0.3579	0.0900
77	0.0251	0.0027	-0.4392	-0.0813
78	-0.0069	-0.0320	-0.4570	-0.0178
79	0.0193	0.0262	-0.4221	0.0349
80	0.0160	-0.0033	-0.3564	0.0657
81	0.0013	-0.0147	-0.3633	-0.0069
82	0.0151	0.0138	-0.3951	-0.0318
83	-0.0036	-0.0187	-0.5884	-0.1933
84	0.0023	0.0059	-0.3991	0.1893
85	0.0020	-0.0003	-0.3601	0.0390
86	0.0078	0.0058	-0.4074	-0.0473
87	-0.0007	-0.0084	-0.4281	-0.0050
88	-0.0049	-0.0042	-0.4136	0.0146
89	0.0031	0.0080	-0.3998	0.0138
90	0.0047	0.0016	-0.4077	-0.0079
91	0.0102	0.0056	-0.4247	-0.0170
92	0.0133	0.0031	-0.3302	0.0945
93	0.0120	-0.0013	-0.3491	-0.0189
94	0.0164	0.0044	-0.4758	-0.1267
95	0.0162	-0.0002	-0.3103	0.1655

96	-0.0227	-0.0389	-0.3833	-0.0730
97	0.0202	0.0429	-0.4101	-0.0268
98	-0.0093	-0.0296	-0.4753	-0.0652
99	0.0091	0.0184	-0.3743	0.1010
100	0.0038	-0.0053	-0.3290	0.0453

3. Dengan $B = 1$.

T	MT	m	ET	m
1	0.9949	-	-8.9522	-
2	0.9938	-0.0011	-8.9316	0.0207
3	0.9922	-0.0016	-8.9247	0.0069
4	0.9191	-0.0731	-8.5440	0.3807
5	0.9893	0.0702	-8.8524	-0.3084
6	0.9780	-0.0113	-8.7042	0.1482
7	0.9253	-0.0527	-8.3333	0.3709
8	0.9289	0.0036	-8.1004	0.2329
9	0.8700	-0.0589	-7.6238	0.4767
10	0.7969	-0.0731	-6.8556	0.7682
11	0.6656	-0.1313	-5.6824	1.1731
12	0.5787	-0.0869	-4.9680	0.7144
13	0.5349	-0.0438	-4.5544	0.4136
14	0.3167	-0.2182	-3.2642	1.2902
15	0.3698	0.0531	-3.3742	-0.1100
16	0.1804	-0.1893	-2.5022	0.8720
17	0.2298	0.0493	-2.4449	0.0573
18	0.1344	-0.0953	-2.0971	0.3478
19	0.1971	0.0627	-2.2273	-0.1302
20	0.1569	-0.0402	-2.0449	0.1824
21	0.1482	-0.0087	-1.8442	0.2007
22	0.1576	0.0093	-1.8678	-0.0236
23	0.0867	-0.0709	-1.4129	0.4549
24	0.0920	0.0053	-1.5053	-0.0924
25	0.0651	-0.0269	-1.3362	0.1691
26	0.0684	0.0033	-1.3662	-0.0300
27	0.0649	-0.0036	-1.3271	0.0391
28	0.1004	0.0356	-1.3573	-0.0302
29	0.1140	0.0136	-1.4242	-0.0669
30	0.0642	-0.0498	-1.2198	0.2044

31	0.0871	0.0229	-1.2836	-0.0638
32	0.0547	-0.0324	-1.1000	0.1836
33	0.0067	-0.0480	-0.9987	0.1013
34	0.0567	0.0500	-1.1856	-0.1869
35	0.0527	-0.0040	-1.0127	0.1729
36	0.0462	-0.0064	-1.1538	-0.1411
37	0.0162	-0.0300	-0.9140	0.2398
38	0.0378	0.0216	-0.9018	0.0122
39	0.0871	0.0493	-1.0062	-0.1044
40	0.0696	-0.0176	-0.8393	0.1669
41	0.0045	-0.0650	-0.7847	0.0547
42	0.0378	0.0333	-0.9338	-0.1491
43	0.0049	-0.0329	-0.6467	0.2871
44	0.0478	0.0429	-0.8229	-1.1100
45	0.2578	0.2100	-0.6516	0.1713
46	0.0364	-0.2214	-0.7404	-0.0889
47	0.0140	-0.0224	-0.6967	0.0438
48	0.0224	0.0084	-0.6909	0.0058
49	0.0142	-0.0082	-0.8107	-0.1198
50	0.0271	0.0129	-0.5569	0.2538
51	0.0311	0.0040	-0.7458	-0.1889
52	0.0229	-0.0082	-0.5224	0.2233
53	0.0169	-0.0060	-0.6900	-0.1676
54	0.0507	0.0338	-0.6604	0.0296
55	0.0487	-0.0020	-0.6976	-0.0371
56	0.0133	-0.0353	-0.5360	0.1616
57	0.0316	0.0182	-0.6627	-0.1267
58	0.0282	-0.0033	-0.6540	0.0087
59	0.0056	-0.0227	-0.5140	0.1400
60	0.0098	0.0042	-0.5164	-0.0024
61	0.0251	0.0153	-0.5602	-0.0438
62	0.0373	0.0122	-0.5493	0.0109
63	0.0116	-0.0258	-0.5004	0.0489
64	0.0038	-0.0078	-0.4536	0.0469
65	0.0038	0.0000	-0.4340	0.0196
66	0.0267	0.0229	-0.4907	-0.0567
67	0.0311	0.0044	-0.5022	-0.0116
68	0.0384	0.0073	-0.5682	-0.0660
69	0.0400	0.0016	-0.5520	0.0162
70	0.0278	-0.0122	-0.4260	0.1260
71	0.0269	-0.0009	-0.4393	-0.0133

72	0.0127	-0.0142	-0.5584	-0.1191
73	0.0393	0.0267	-0.5424	0.0160
74	0.0382	-0.0011	-0.4418	0.1007
75	0.0027	-0.0356	-0.4756	-0.0338
76	0.0131	0.0104	-0.4771	-0.0016
77	0.0322	0.0191	-0.3771	0.1000
78	0.0289	-0.0033	-0.4209	-0.0438
79	0.0011	-0.0278	-0.4669	-0.0460
80	0.0280	0.0269	-0.3747	0.0922
81	0.0287	0.0007	-0.4731	-0.0984
82	-0.0109	-0.0396	-0.4051	0.0680
83	0.0053	0.0162	-0.3022	0.1029
84	0.0031	-0.0022	-0.2627	0.0396
85	0.0098	0.0067	-0.4347	-0.1720
86	0.0127	0.0029	-0.4216	0.0131
87	0.0029	-0.0098	-0.3602	-0.0043
88	-0.5778	-0.5807	-0.2680	0.0922
89	0.0456	0.6233	-0.3282	-0.0602
90	0.0198	-0.0258	-0.3416	-0.0133
91	-0.0011	-0.0209	-0.2371	0.1045
92	0.0207	0.0218	-0.3176	-0.0805
93	-0.0013	-0.0220	-0.2440	0.0736
94	0.0229	0.0242	-0.3162	-0.0722
95	0.0198	-0.0031	-0.2562	0.0600
96	0.0038	-0.0160	-0.3967	-0.1405
97	0.0013	-0.0024	-0.4031	-0.0064
98	0.0164	0.0151	-0.2173	0.1858
99	0.0004	-0.0160	-0.2849	-0.0676
100	0.0018	0.0013	-0.4373	-0.1524

4. Dengan B = 2.

1	0.9940	-	-9.9276	-
2	0.9182	-0.0758	-9.4649	0.4627
3	0.9927	0.0744	-9.9284	-0.4636
4	0.9891	-0.0036	-9.8804	0.0480
5	0.9913	0.0022	-9.9080	-0.0276
6	0.9804	-0.0109	-9.7422	0.1658
7	0.9722	-0.0082	-9.6280	0.1142
8	0.9544	-0.0178	-9.3169	0.3111

9	0.9493	-0.0051	-9.1893	0.1276
10	0.8858	-0.0636	-8.3636	0.8258
11	0.8287	-0.0571	-7.6840	0.6796
12	0.7629	-0.0658	-6.8360	0.8480
13	0.6773	-0.0856	-6.0978	0.7382
14	0.5727	-0.1047	-5.0831	1.0147
15	0.5327	-0.0400	-4.7347	0.3484
16	0.4867	-0.0460	-4.1929	0.5418
17	0.4600	-0.0267	-3.9564	0.2365
18	0.3000	-0.1600	-2.9964	0.9600
19	0.3131	0.0131	-2.7987	0.1978
20	0.2598	-0.0533	-2.6084	0.1902
21	0.2276	-0.0322	-2.3093	0.2991
22	0.2200	-0.0076	-2.1822	0.1271
23	0.1747	-0.0453	-2.0169	0.1653
24	0.1929	0.0182	-2.0338	-0.0169
25	0.1729	-0.0200	-1.8320	0.2018
26	0.1584	-0.0144	-1.6982	0.1338
27	0.1100	-0.0484	-1.5516	0.1467
28	0.1456	0.0356	-1.5196	0.0320
29	0.1680	0.0224	-1.4542	0.0653
30	0.1251	-0.0429	-1.4289	0.0253
31	0.1076	-0.0176	-1.3547	0.0742
32	0.1193	0.0118	-1.2822	0.0725
33	0.0896	-0.0298	-1.2351	0.0471
34	0.0900	0.0004	-1.2449	-0.0098
35	0.1020	0.0120	-1.1693	0.0756
36	0.1244	0.0224	-1.1876	-0.0182
37	0.0780	-0.0464	-1.1089	0.0787
38	0.1089	0.0309	-1.1778	-0.0689
39	0.0898	-0.0191	-0.9351	0.2427
40	0.0749	-0.0149	-1.0280	-0.0929
41	0.0924	0.0176	-0.9884	0.0396
42	0.0678	-0.0247	-0.8324	0.1560
43	0.0849	0.0171	-0.9627	-0.1302
44	0.1147	0.0298	-1.0862	-0.9560
45	0.0791	-0.0356	-0.8924	0.1938
46	0.0676	-0.0116	-0.8427	0.0498
47	0.0647	-0.0029	-0.9151	-0.0724
48	0.0607	-0.0040	-0.6884	0.2267
49	0.0309	-0.0298	-0.7107	-0.0222

50	0.0724	0.0416	-0.8453	-0.1347
51	0.0569	-0.0156	-0.8124	0.0329
52	0.0884	0.0316	-0.8702	-0.0578
53	0.0220	-0.0664	-0.7480	0.1222
54	0.0427	0.0207	-0.7200	0.0280
55	0.0527	0.0100	-0.7613	-0.0413
56	0.0520	-0.0007	-0.6640	0.0973
57	0.0484	-0.0036	-0.6373	0.0267
58	0.0153	-0.0331	-0.5800	0.0573
59	0.0378	0.0224	-0.6196	-0.0396
60	0.0544	0.0167	-0.6564	-0.0369
61	0.0231	-0.0313	-0.5351	0.1213
62	0.0511	0.0280	-0.6196	-0.0845
63	0.0316	-0.0196	-0.5716	0.0480
64	0.0347	0.0031	-0.6027	-0.0311
65	0.0193	-0.0153	-0.5667	0.0360
66	0.0102	-0.0091	-0.5182	0.0485
67	0.0391	0.0289	-0.4551	0.0631
68	0.0367	-0.0024	-0.6191	-0.1640
69	0.0307	-0.0060	-0.5769	0.0422
70	0.0313	0.0007	-0.5000	0.0769
71	0.0449	0.0136	-0.6338	-0.1338
72	0.0416	-0.0033	-0.5027	0.1311
73	0.0347	-0.0069	-0.5600	-0.0573
74	0.0278	-0.0069	-0.4662	0.0938
75	0.0280	0.0002	-0.6302	-0.1640
76	0.0560	0.0280	-0.6933	-0.0631
77	0.0371	-0.0189	-0.5133	0.1800
78	0.0140	-0.0231	-0.3604	0.1529
79	0.0291	0.0151	-0.4387	-0.0782
80	0.0278	-0.0013	-0.3987	0.0400
81	0.0058	-0.0220	-0.3493	0.0493
82	0.0391	0.0333	-0.4089	-0.0596
83	0.0238	-0.0153	-0.4529	-0.0440
84	0.0309	0.0071	-0.5702	-0.1173
85	0.0269	-0.0040	-0.5907	-0.0205
86	0.0322	0.0053	-0.4751	0.1156
87	0.0244	-0.0078	-0.4720	-0.0058
88	0.0267	0.0022	-0.5049	-0.0329
89	0.0196	-0.0071	-0.3822	0.1227
90	0.0264	0.0069	-0.3942	-0.0120

91	0.0036	-0.0229	-0.2809	0.1133
92	0.0098	0.0062	-0.3609	-0.0800
93	0.0289	0.0191	-0.3884	-0.0276
94	0.0176	-0.0113	-0.3196	0.0689
95	0.0278	0.0102	-0.3773	-0.0578
96	0.0313	0.0036	-0.3489	0.0284
97	0.0373	0.0060	-0.3502	-0.0013
98	0.0260	-0.0113	-0.3560	-0.0058
99	0.0022	-0.0238	-0.3316	0.0244
100	0.0036	0.0013	-0.2044	0.1271

Keterangan :

T : Suhu

MT : Nilai magnetisasi

ET : Nilai energi

m : gradien