

MagRay 1000 standard equipment Exp.

1. 사용장비

1) MagRay 1000 (Nano Magnetic Particle Analyzer Controller)

- a. Serial No. : 58YV-25OG-A03R-71ES
- b. Serial No. : 54QI-I4V3-C2HN-355G
- c. Serial No. : D8JM-603S-R161-YXNS

2) Measurement Head

- a. Serial No. : 5CG6-L4G8-75UQ-4836
- b. Serial No. : AU7R-B7QV-H0CD-122N
- c. Serial No. : J086-82O2-781Y-V774

2. S/W setting condition

1) Low Frequency

	source	reference
Freq.	1000	1000
phase	0	0
Gain	0.4	0.1
Gain(V)	0.6	0.1

2) High Frequency

	source	reference
Freq.	65000	65000
phase	0	0
Gain	0.6	0.1
Gain(V)	0.4	0.1

3) Interval : 100 mS

4) Sampling rate : 2 MSa/S

3. 실험에 사용된 nano magnetic particle sample

Chemicell /fluidMAG-UC/C /25mg/ml /100nm /autoclaved

Conc. : 10% (NMP 10 μ l + H2O 90 μ l + Mineral oil 20 μ l)

4. 실험 방법

1) Sample을 준비한다.

2) Controller와 measurement head를 조합하여 값을 측정하여 S/N ratio를 계산한다.

3) S/N ratio 값이 가장 좋은 조합을 표준장비로 한다.

5. 측정 결과

1) Controller a + measurement head a

	1	2	3
noise	8.7	6.5	6.4
signal	110	113	115
S/N	12.64	17.38	17.97

2) Controller a + measurement head b

	1	2	3
noise	5	5	4
signal	146	146	149
S/N	29.20	29.20	37.25

3) Controller a + measurement head c

	1	2	3
noise	9	9	10
signal	242	250	254
S/N	26.89	27.78	25.40

4) Controller b + measurement head a

	1	2	3
noise	28	33	39
signal	2448	2469	2493
S/N	87.43	74.82	63.92

5) Controller b + measurement head b

	1	2	3
noise	35	38	42
signal	1848	1865	1864
S/N	52.80	49.08	44.38

6) Controller b + measurement head c

	1	2	3
noise	96	43	34
signal	533	502	518
S/N	5.55	11.67	15.24

7) Controller c + measurement head a

	1	2	3
noise	48	37	45
signal	372	374	414
S/N	7.75	10.11	9.20

8) Controller c + measurement head b

	1	2	3
noise	45	46	42
signal	1977	1974	1993
S/N	43.93	42.91	47.45

9) Controller c + measurement head c

	1	2	3
noise	47	34	39
signal	2539	2573	2577
S/N	54.02	75.68	66.08