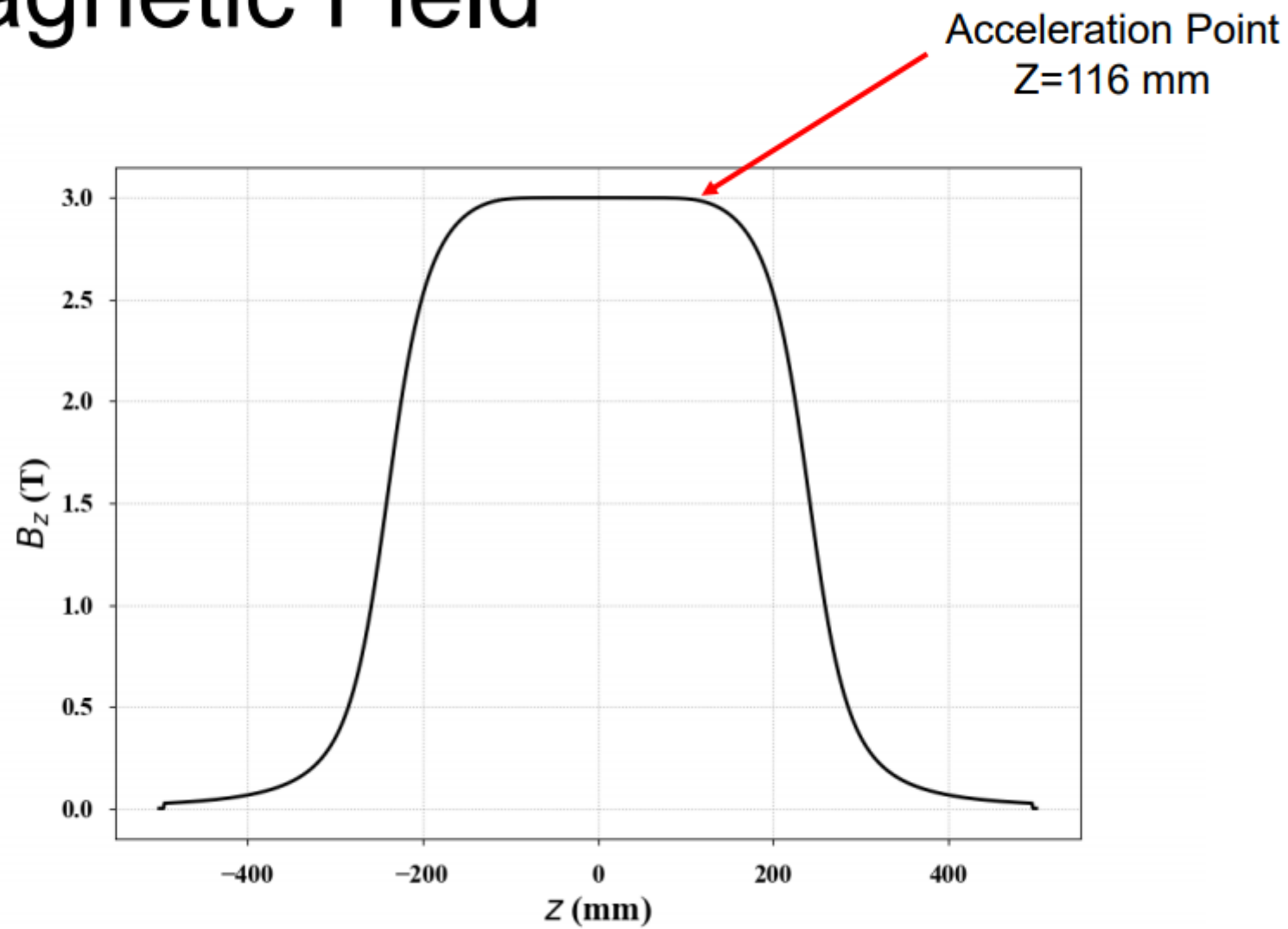
GBAR Trap Meeting

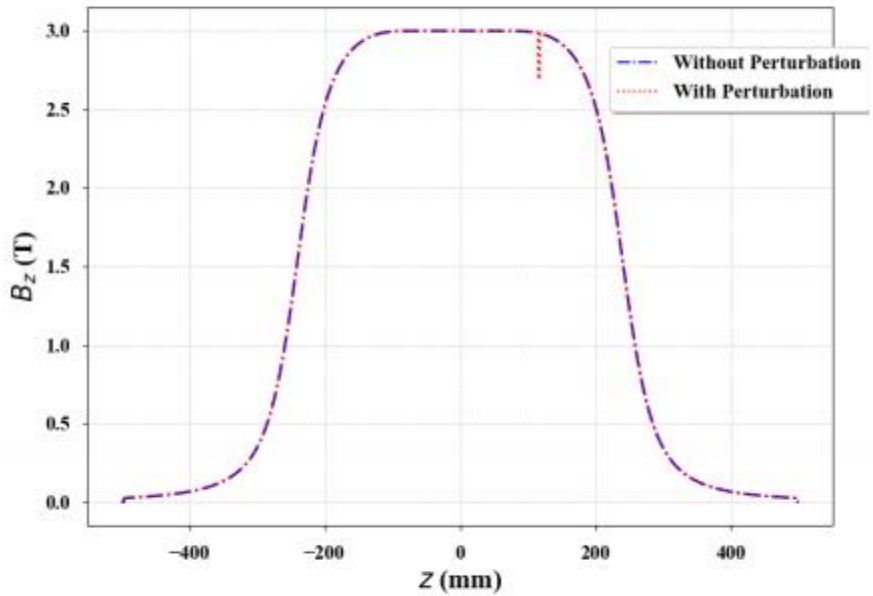
Seoul National University

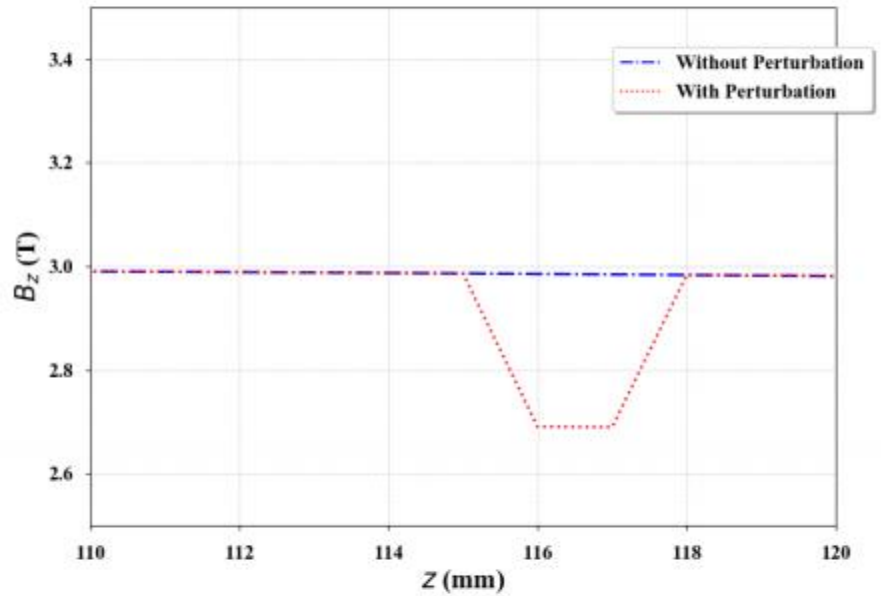
27.May.2019

Magnetic Field



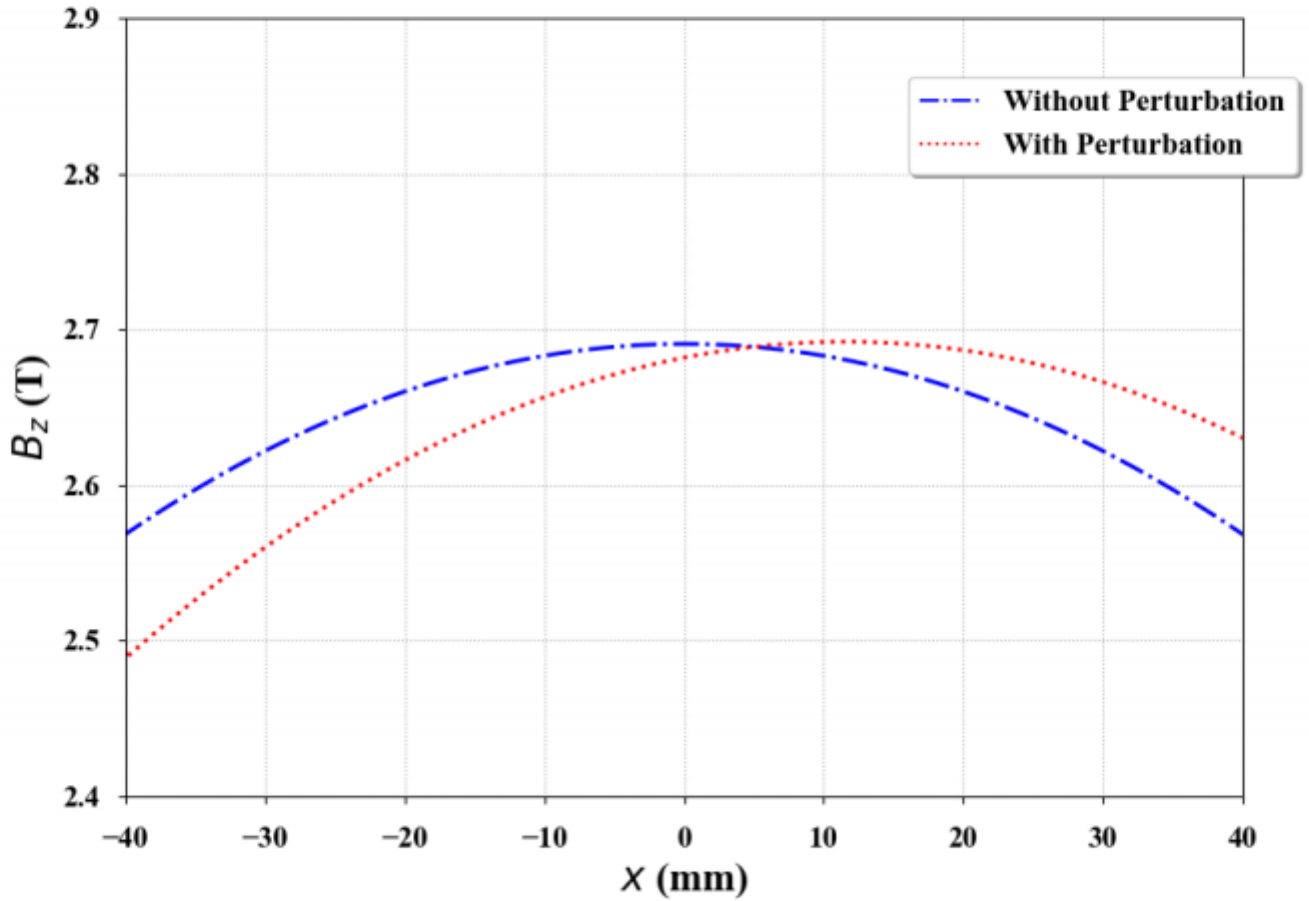
Perturbation (Strength)



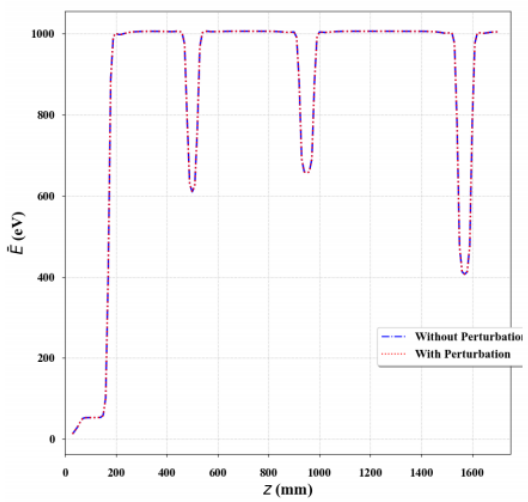


Perturbation (Offset)

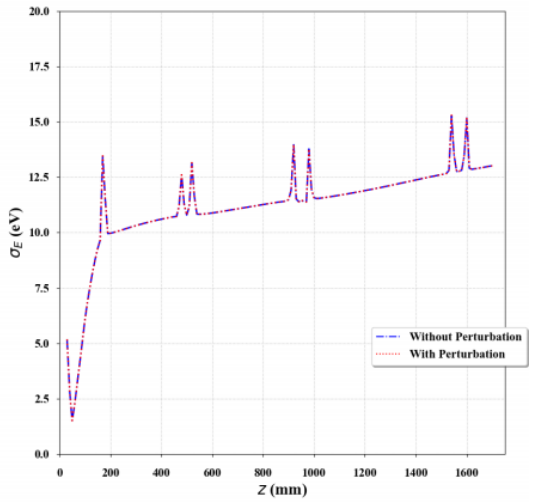
At z=116 mm



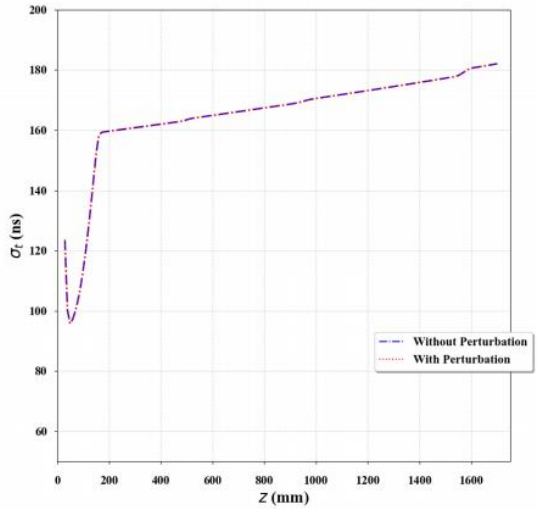
Mean Energy



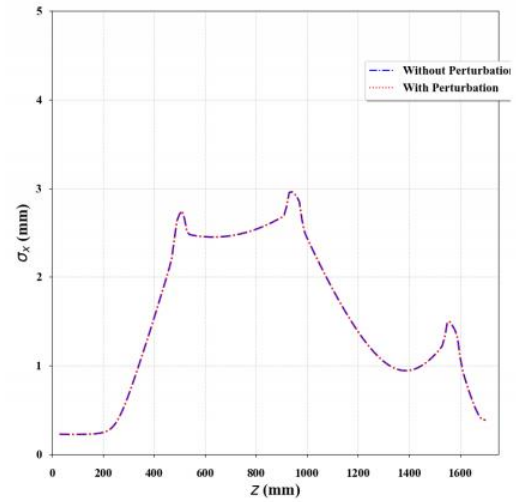
Energy Spread



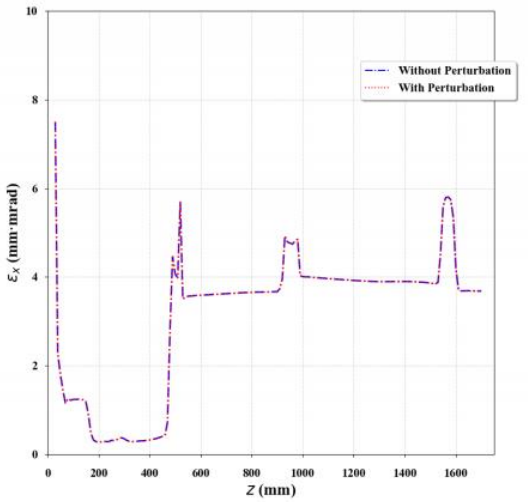
RMS Beam Length (t)



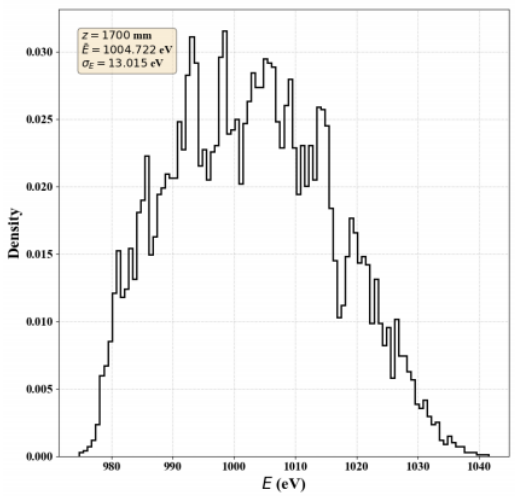
RMS Beam Size (x)



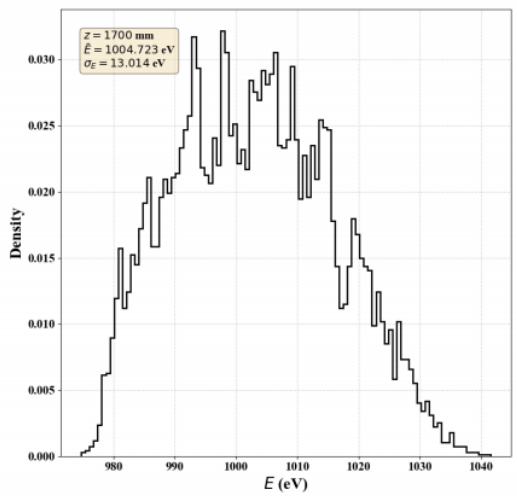
Emittance (x)

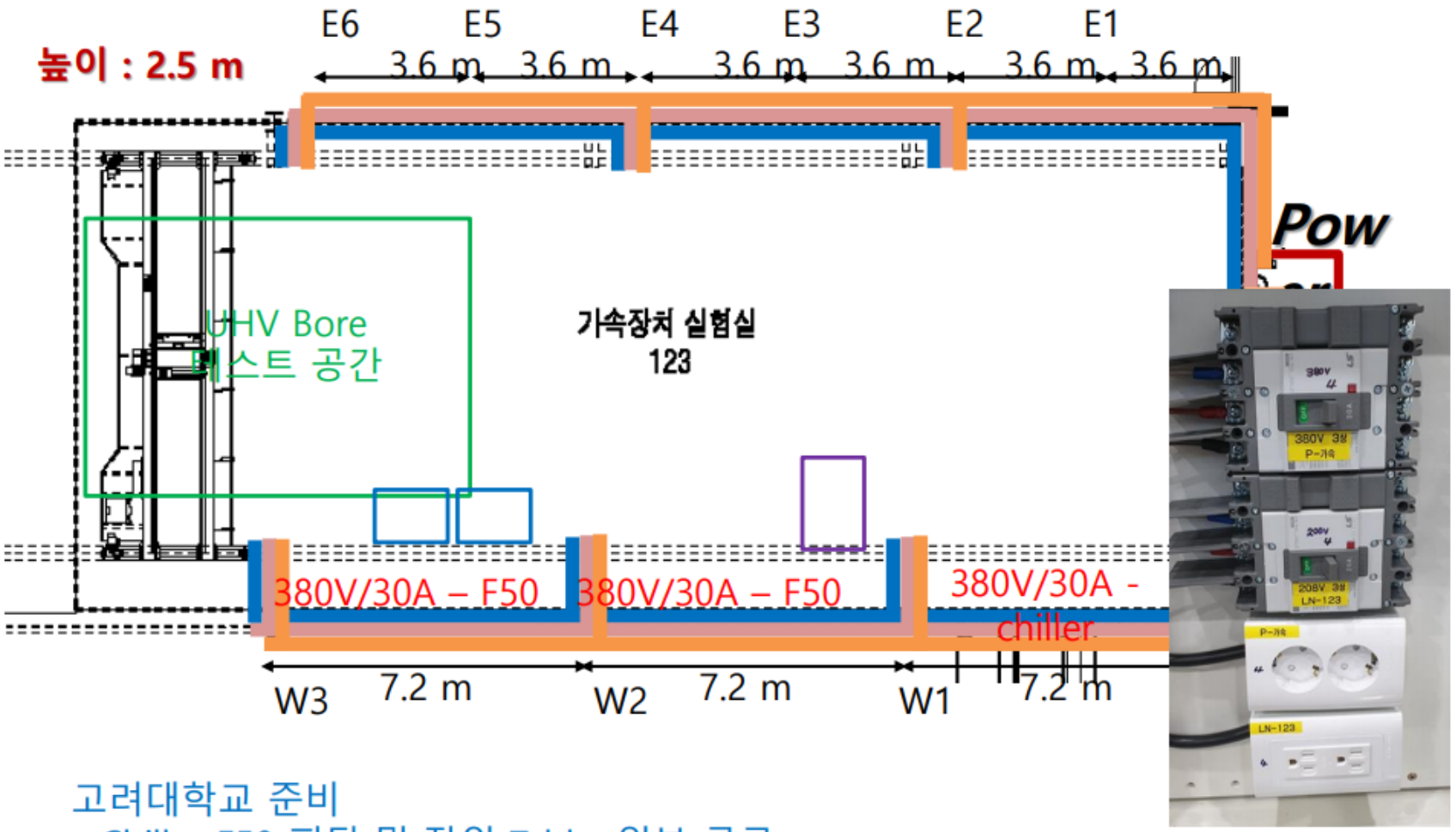


Without Perturbation

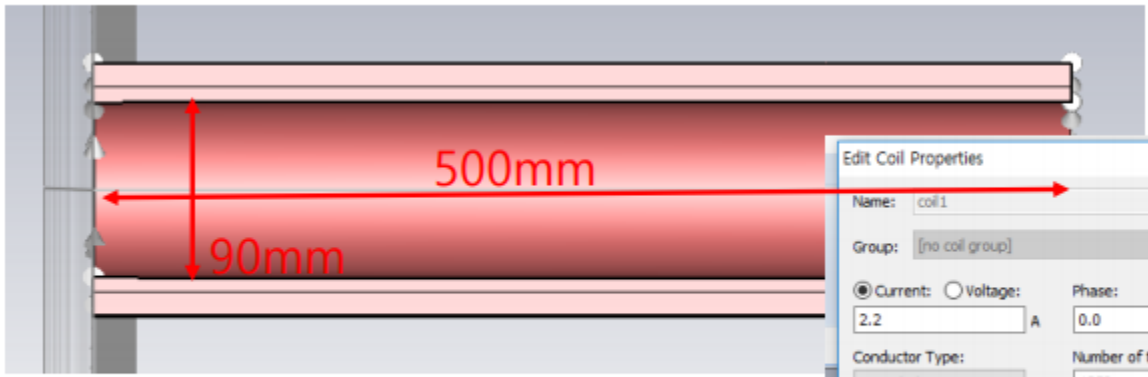


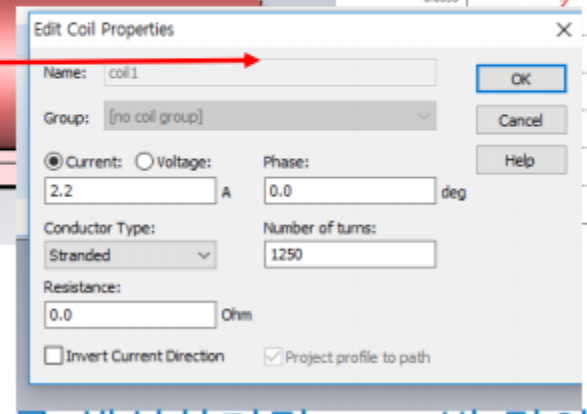
With Perturbation

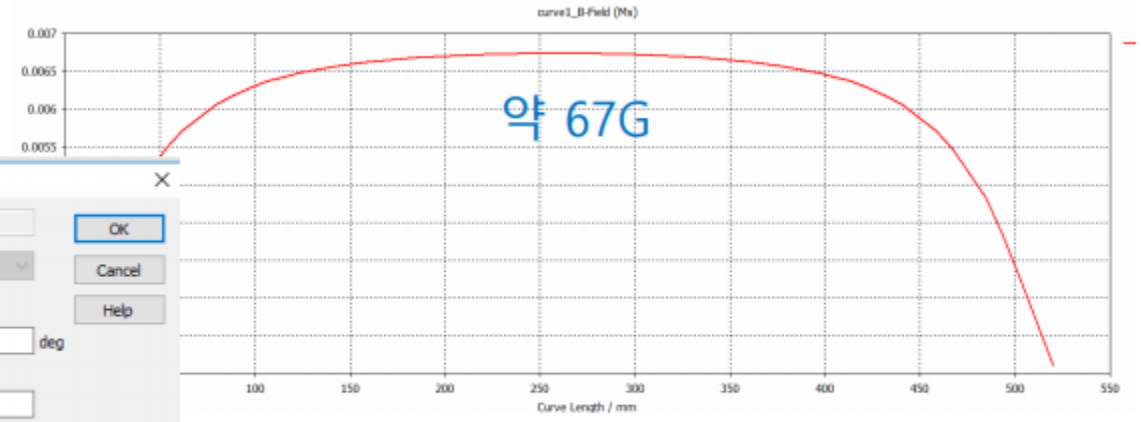




고려대학교 준비
- Chiller-F50 피팅 및 작업 Table, 일부 공구



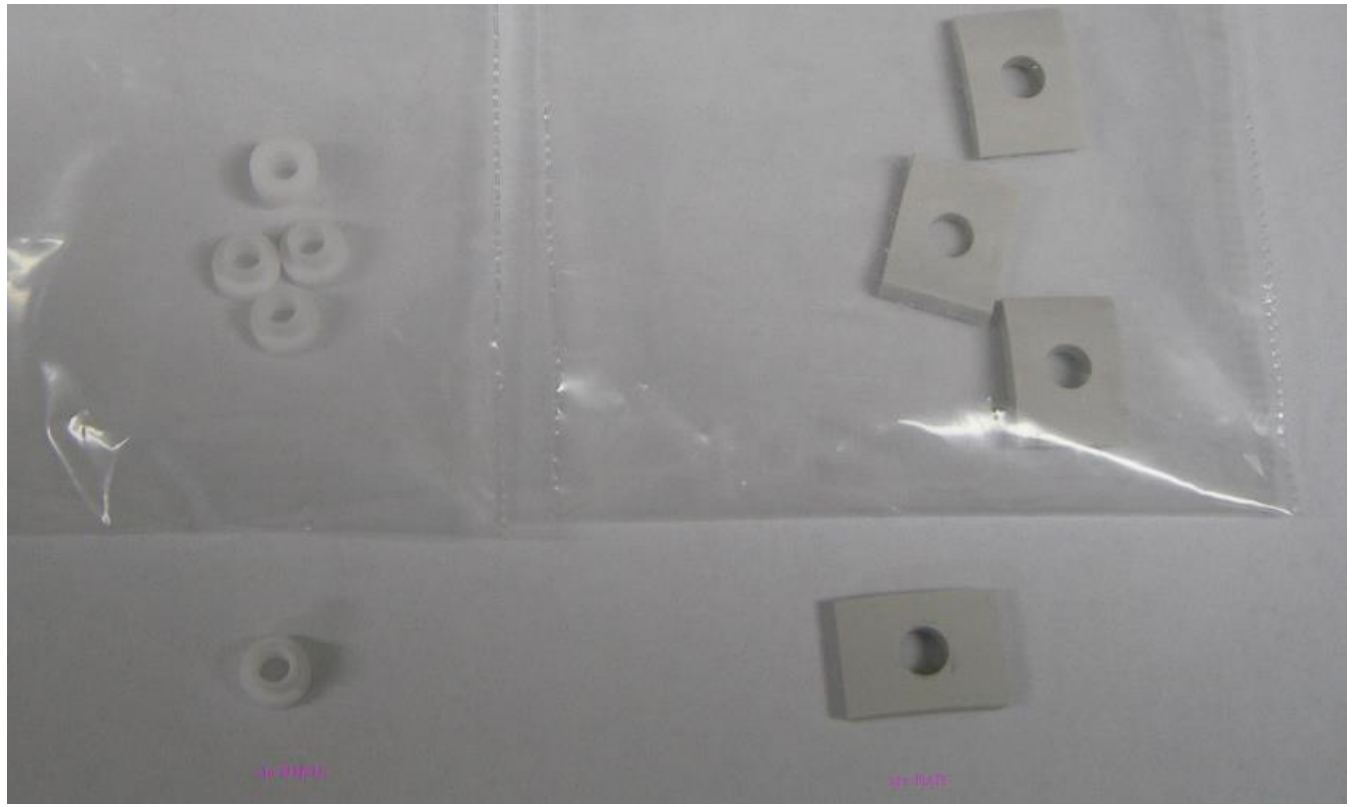


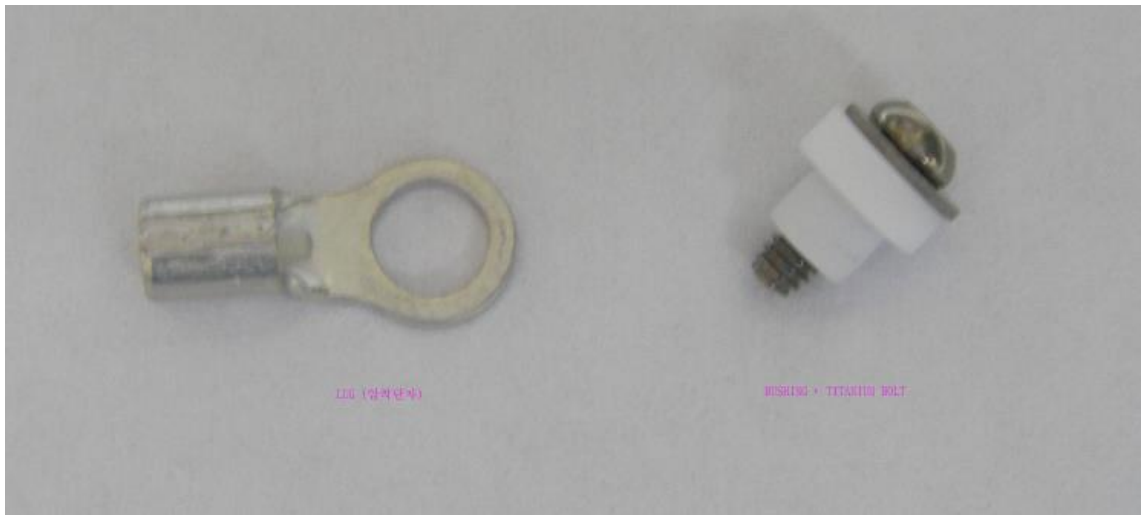


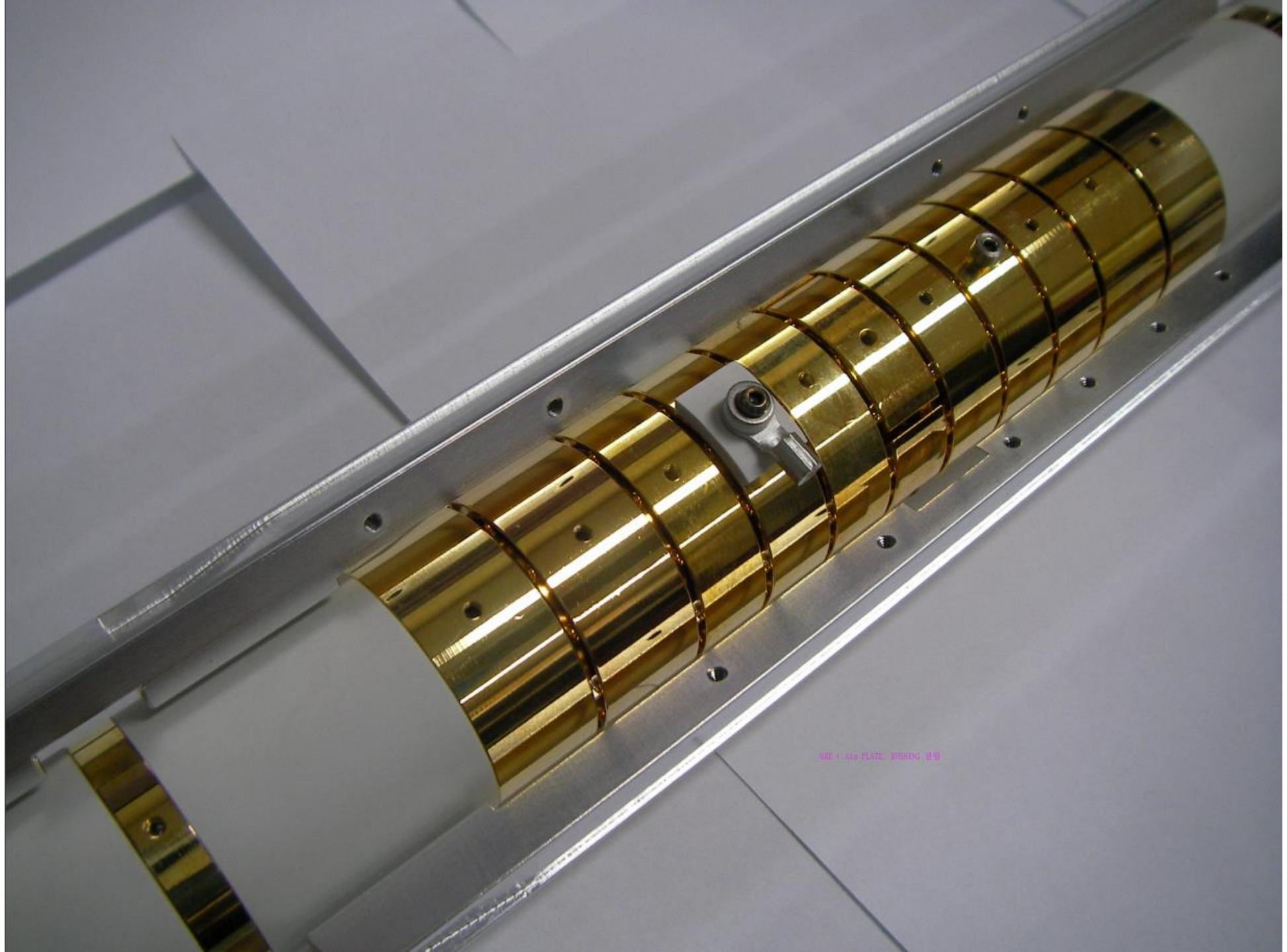
코일에 2.2A를 걸어 50cm 구역에 67G를 생성하려면 1250번 감아야 함
-> 45mm X 2 X 3.14 X 1250 = 353.25m
현재 고려대 보유 전선은 130m로 220m 정도 부족

AWG 19 선을 이용하여 6A 전류 사용시 450번 감아야 함
-> 45mm X 2 X 3.14 X 450 = 127.17m
업체에 구입 및 제작 의뢰

AWG number (16~40)	지름 [mm]	지름[mm²]	직류 저항 [Ω/M]	허용 전류
16	1.29	1.31	0.0132	18
17	1.15	1.04	0.0166	15
18	1.02	0.823	0.0210	12
19	0.912	0.653	0.0264	7
20	0.812	0.518	0.0333	5
21	0.723	0.410	0.0420	4
22	0.644	0.326	0.0530	2.5
23	0.573	0.258	0.0668	1
24	0.511	0.205	0.0842	0.6
25	0.455	0.162	0.106	0.5
26	0.405	0.129	0.134	0.4
27	0.361	0.102	0.169	0.3







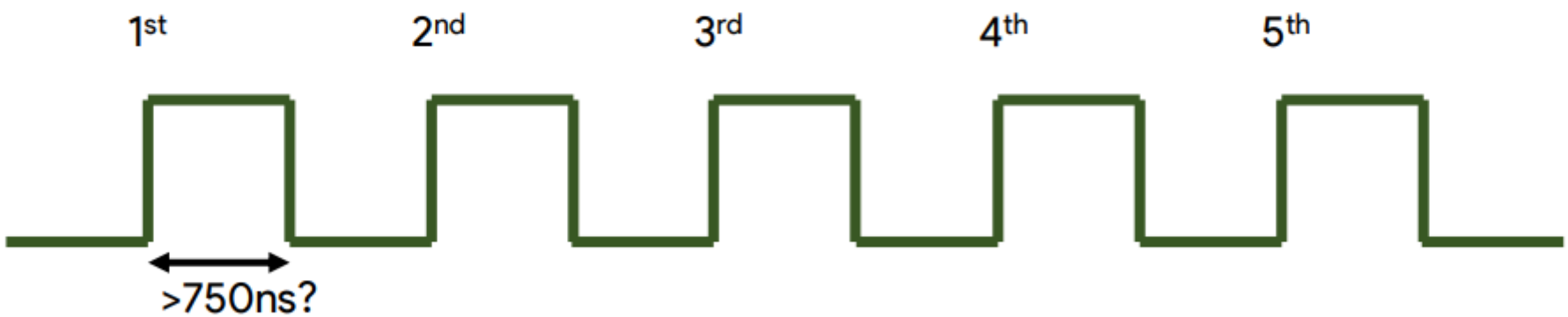
Wave Generator_Burst

- Set RW frequency 1
- Trigger from FPGA
- Stop
- Set RW frequency 2
- Trigger from FPGA

AO-FPGA

1	**1**	**1**	**3.3**
2	2	2	3.3
3	3	3	3.3
0	0	0	0

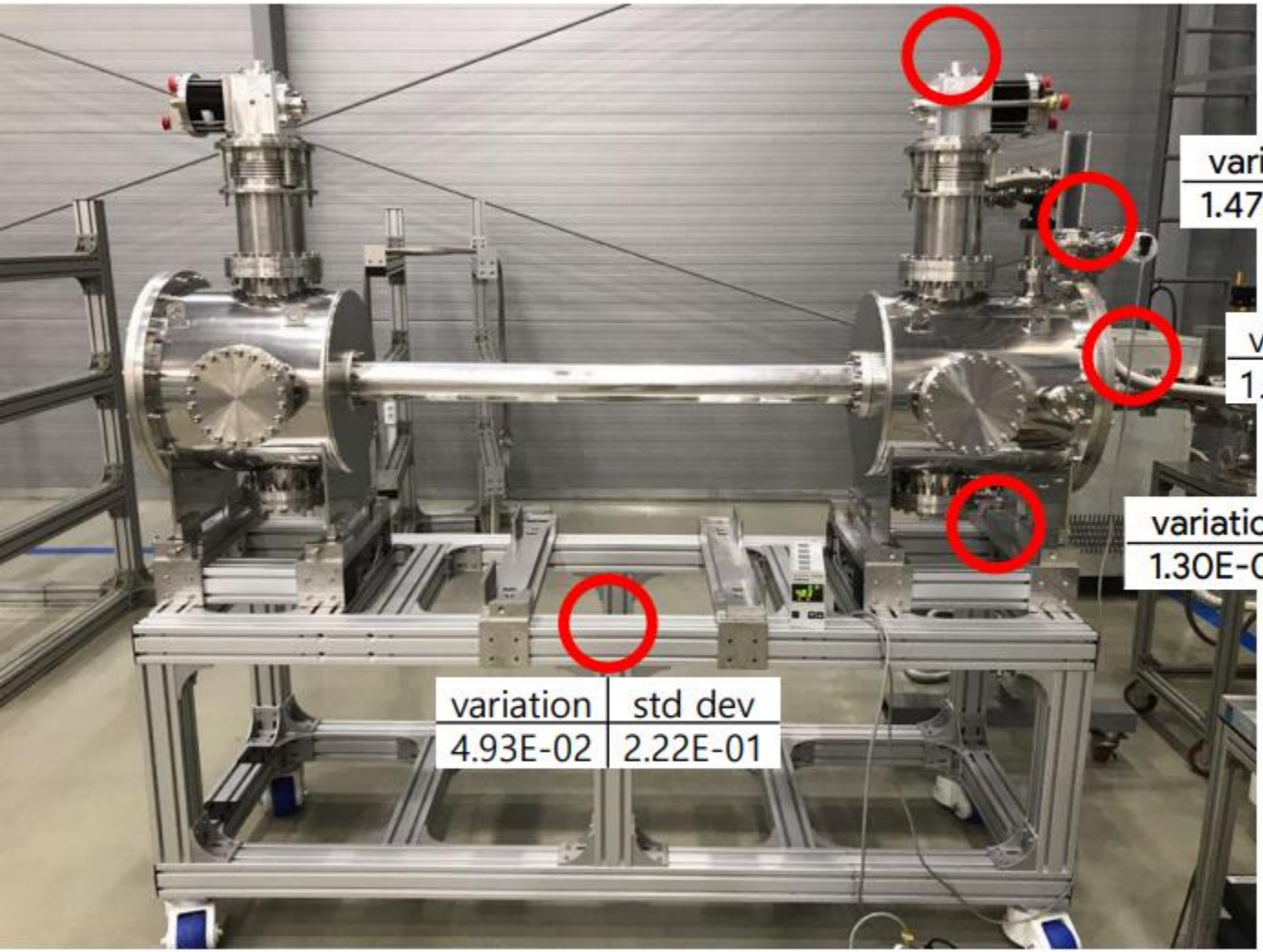
1st Rising edge
2nd Rising edge
3rd Rising edge
4th Rising edge
5th Rising edge



Delay: 5 tick

Vibration

variation	std dev
2.863E-02	1.692E-01



variation	std dev
1.472E-01	3.837E-01

variation	std dev
1.423E-02	1.193E-01

variation	std dev
1.30E-02	1.14E-01

variation	std dev
4.93E-02	2.22E-01

Thank You!