

Cavity status; recent KEK activities

(1) MHI-010, MHI-011; S0 cavities field measurements

MHI-010: 1 st VT	23.8MV/m @ Q0=1.1E10	May 20,2010
2 nd VT	25.7MV/m @Q0=8.1E9	June 17,2010
MHI-011: 1 st VT	5MV/m	April 15,2010
2 nd VT	28.0MV/m @Q0=5.1E9	June 10,2010

(2) KEK-JLAB collaboration; JLAB LG-01 for local grinding

2nd local grinding and 30um EP finish were over.

Then molding again and found that it became more smooth & better surface.

However, it suffers brown stains on their iris, on last week.

->one more 5um EP with enough water rinsing will be tried.

(we will use more better 9-cell water rinse condition)

(3) KEK-Saclay collaboration; on 1DE1 single cell sponge-wipe possibility

STF-EP system create brown stains on iris, source of field emission maybe.

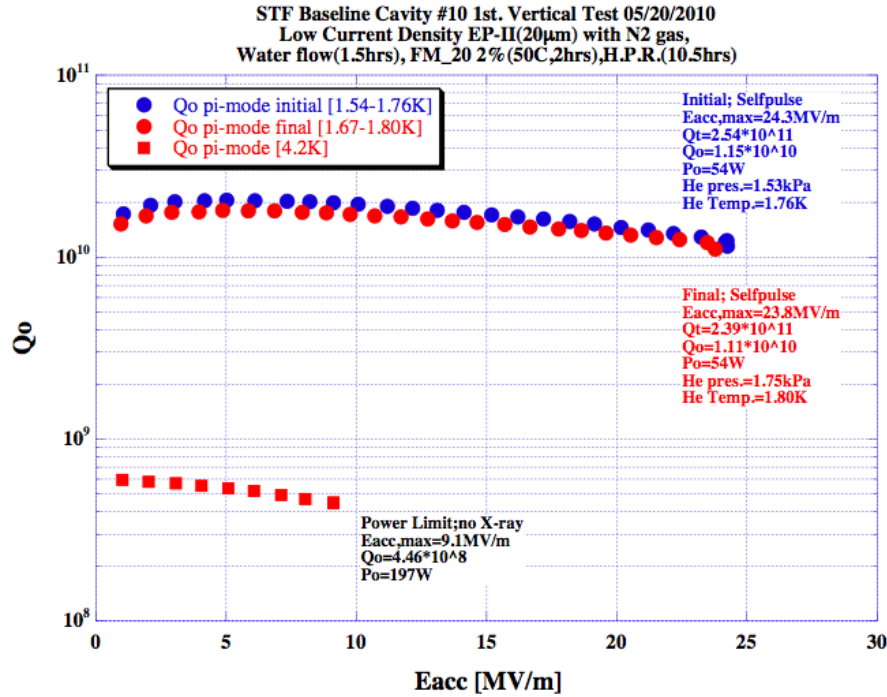
we tried 9 times of EP with different water-rinse condition,

and found good water-rinse condition (on single-cell).

The cavity was sent back to Saclay for VT, last week.

MHI-010

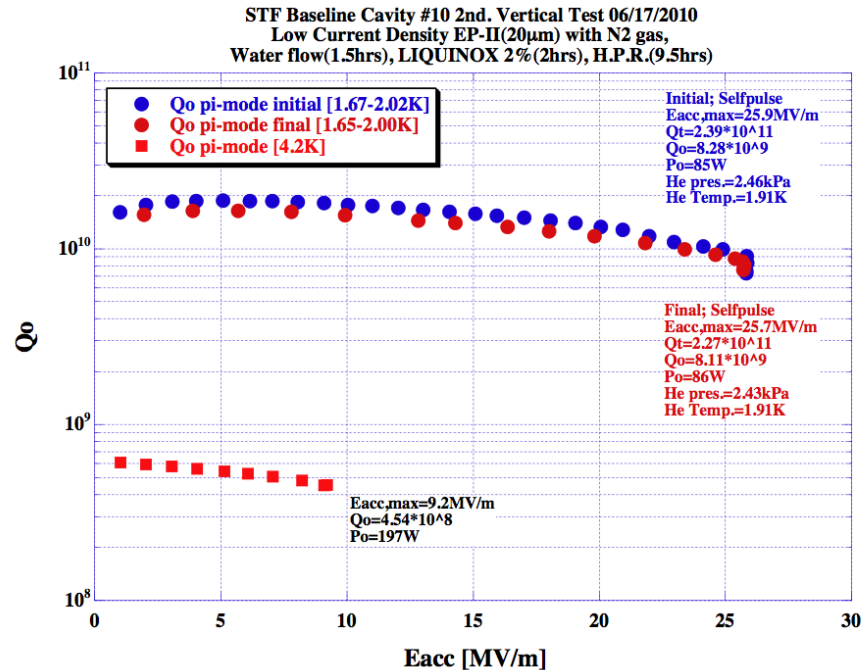
1st VT



23.8MV/m
Q=1.11E10

#1cell equator pits

2nd VT

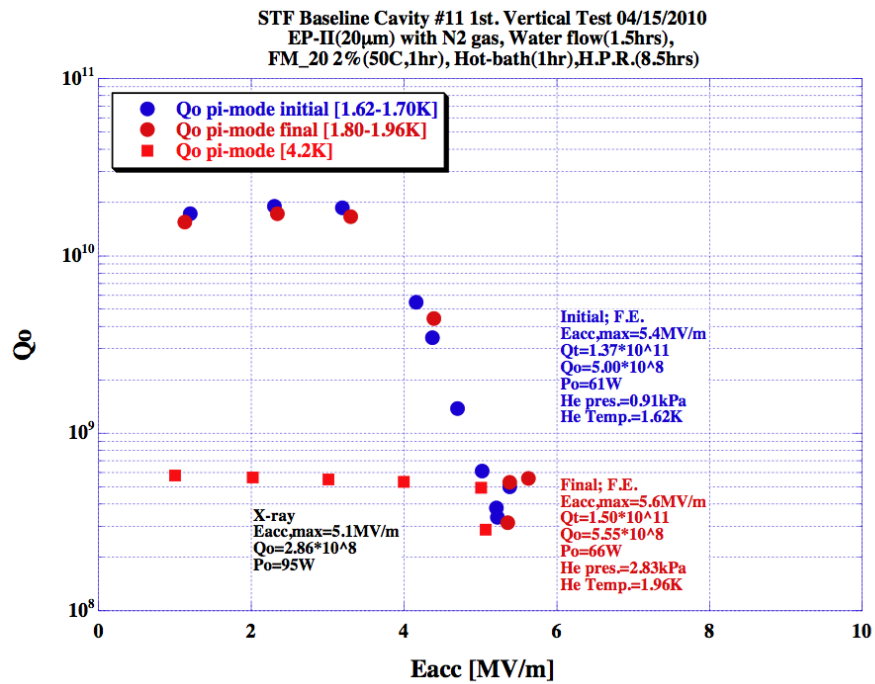


25.7MV/m
Q=8.11E9

#1cell equator pits

MHI-011

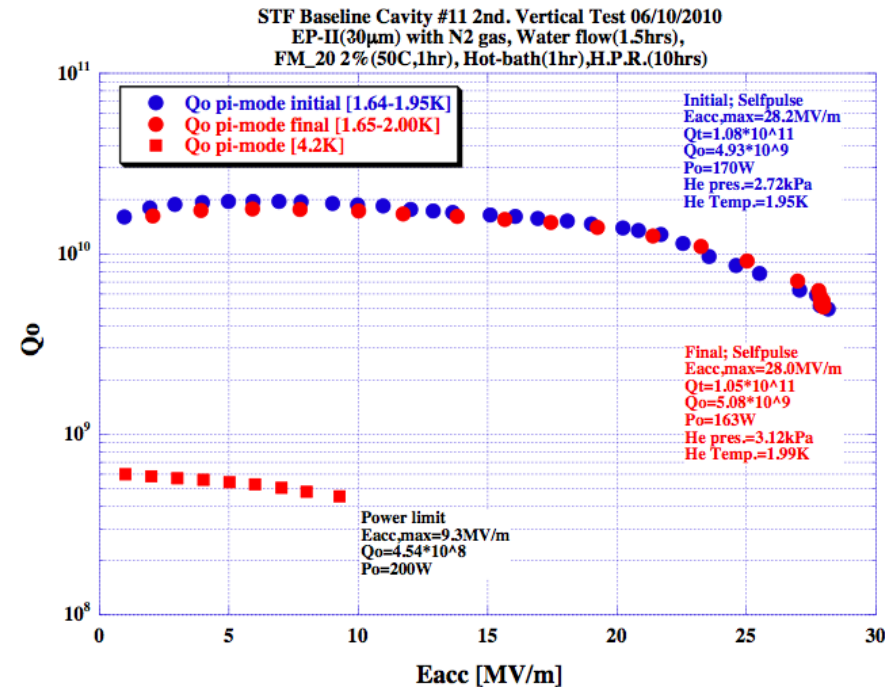
1st VT



5MV/m
Q=5E8

Contamination
during assembly?

2nd VT



28.0MV/m
Q=5.1E9

Heating at #1cell
equator 270degree

stain record of 1DE1-cavity

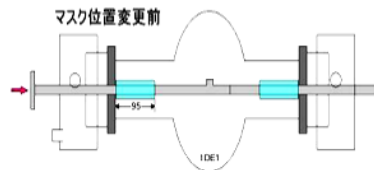
1DE1 single cell cavity; EP process history at KEK-STF M. Sawabe & H. Hayano

ID number	date	Removal (μm)	Current Density (mA/cm^2)	Voltage (V)	N ₂ Flow	Rinsing by Pure water	comment	Stain	number of stain (up-stream iris)	number of stain (down-stream iris) (※3)
1	2010.1.8	50	28.8	12	no	Supply 180sec. Drainage 60sec. Total 90min.			0	2
2	2010.4.12	20	20	8	no	Supply 180sec. Drainage 60sec. Total 90min.		×	5	10
3	2010.4.26	20	20.5	8	5L/min.	Supply 180sec. Drainage 60sec. Total 90min.		×	14	3
4	2010.5.10 AM	20	36.2	19	no	Supply 180sec. Drainage 60sec. Total 90min.		×	3	2
5	2010.5.10 PM	10	48.4	22	no	Supply 180sec. Drainage 60sec. Total 60min.		×	14	12
6	2010.5.14	10	34.3	19	5L/min.	Supply 40sec. Drainage 60sec. (※1) Total 90min.	10L/min. acid flow during voltage cut-3rpm	×	42	12
7	2010.5.17 AM	5	27.9	18	no	Supply 180sec. Drainage 60sec. Total 60min.	expansion of electrode mask (※2)	×	many	many
8	2010.5.17 PM	5	30.6	18	no	1st Supply 180sec. Drainage 1sec. 2nd~ Supply 30sec. Drainage. 1sec. Total 70min.	add manual valve at drain, and half open	○	2	0
9	2010.5.21	5	32.7	19	no	1st Supply 180sec. Drainage 1sec. 2nd~ Supply 30sec. Drainage. 1sec. Total 90min.	manual valve at drain, and half open. 3rpm cavity rotation in washing	◎	1-2? (vary faint)	0

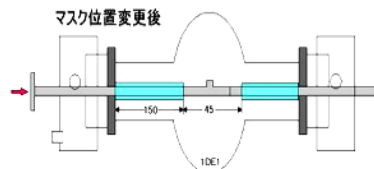
Current Density, Voltage values are the average value of 10 min. at the end of EP.

※1 For single cell cavity: In case of filling, it became over flowing by about 30sec. For about 60 sec draining, water was completely drained.

※2



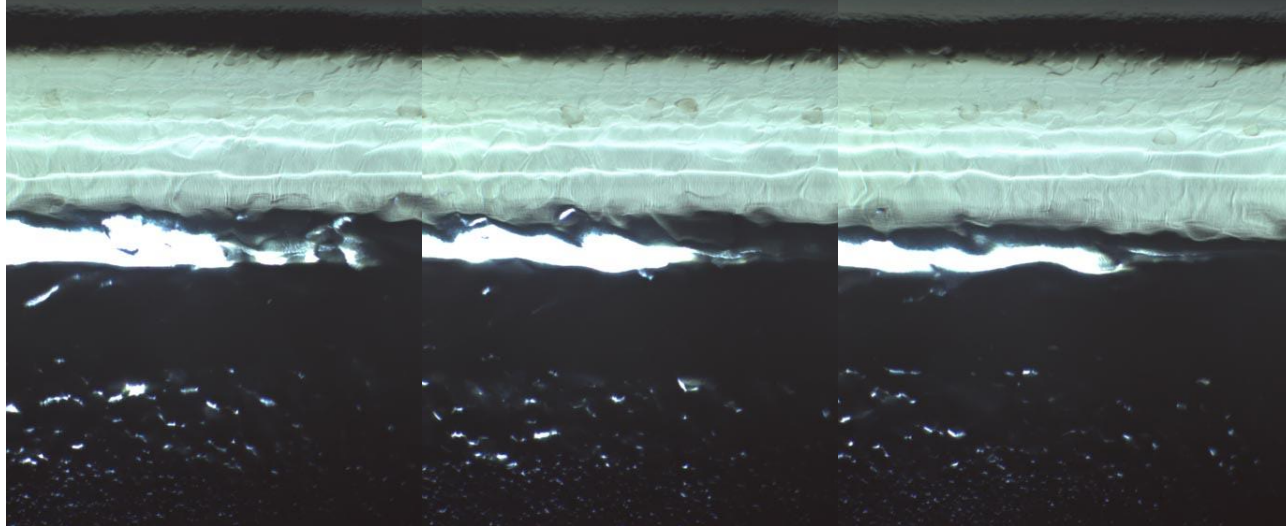
Before electrode mask changed



After electrode mask length changed.

※3 Downstream Iris side is up-side during Rinsing. The rinsing is done by making cavity in vertical position.

ID number 7



many stain

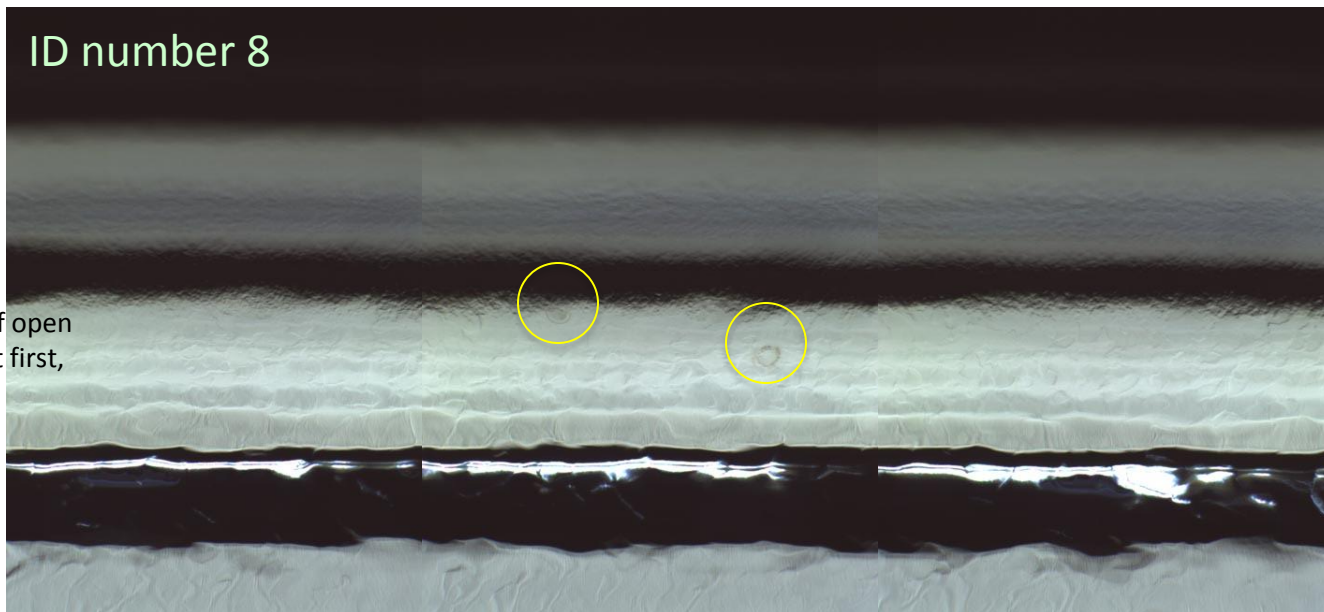
2010, May 17 AM

5um EP, 28mA/cm²

water rinse;
3min supply, 1min dump,
repeat them for 60min

1DE1 single-cell upstream iris [picture#24,25,26]

ID number 8



only 2 stains

2010, May 17 PM

5um EP, 31mA/cm²

water rinse;
add manual valve with half open
3min supply, 1sec dump at first,
30sec supply, 1sec dump,
repeat them for 70min

2010. 05.21 EP 30mA/cm² with modified filling of water just after acid draining
morning

water rinse;
add manual valve with half open
3min supply, 1sec dump at first,
30sec supply, 1sec dump,
repeat them for 90min, 3rpm rotation in rinse.

upstream : 1~2? faint stains
downstream : 0 stains

