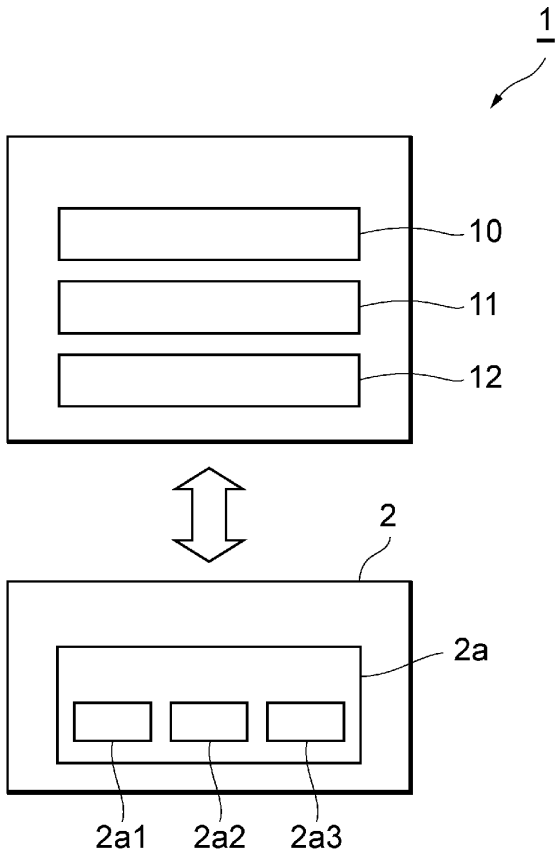
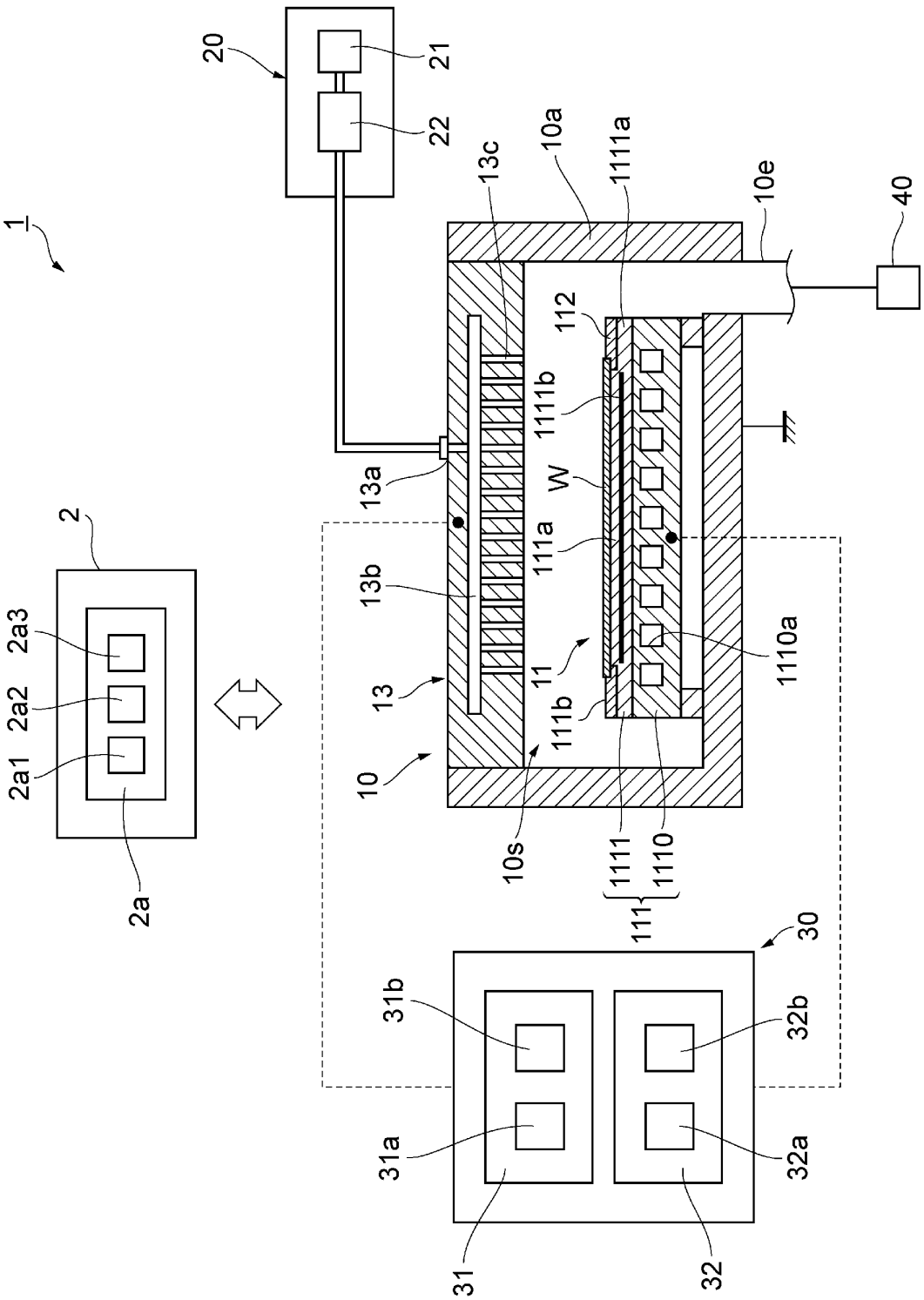
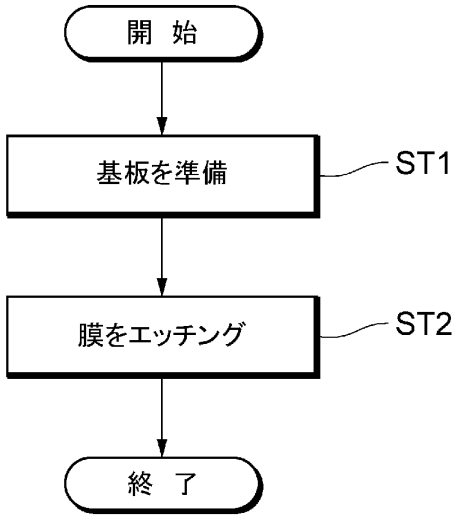
[図1]



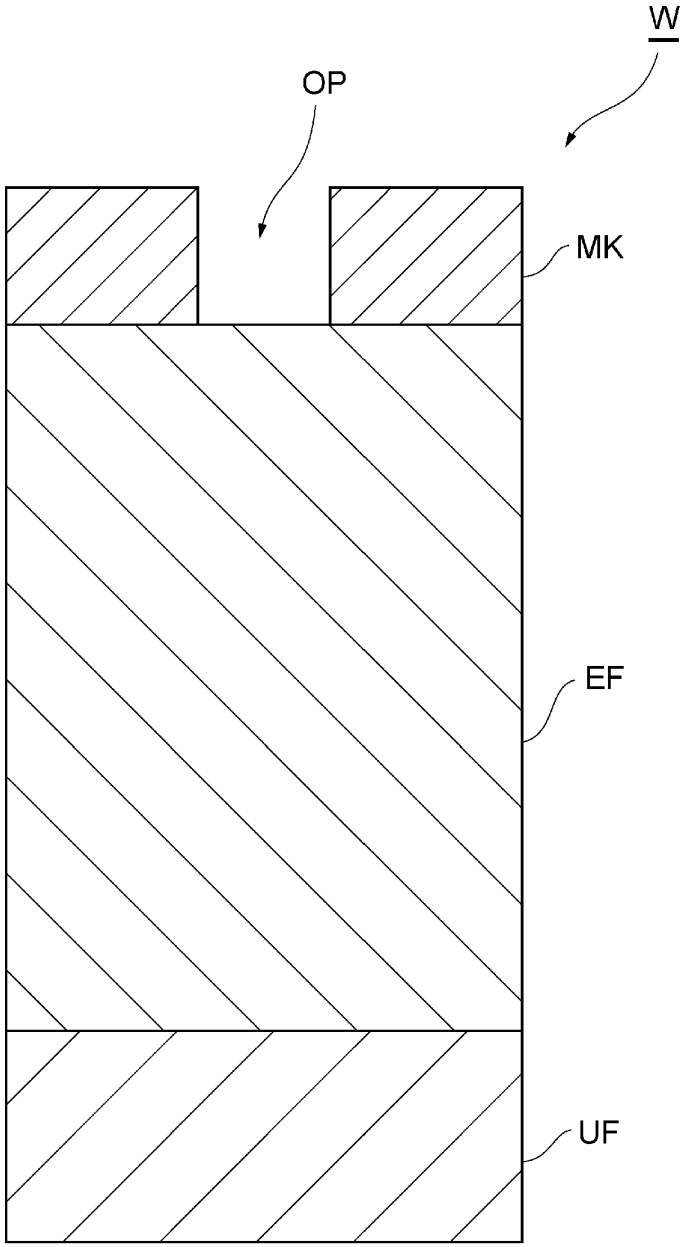
[図2]


1
2
2a
2a1
2a2
2a3
10
10s
11
111
1110
1111
111a
111b
112
1110a
1111a
1111b
10a
10e
13
13a
13b
13c
W
20
21
22
30
31
31a
31b
32
32a
32b
40

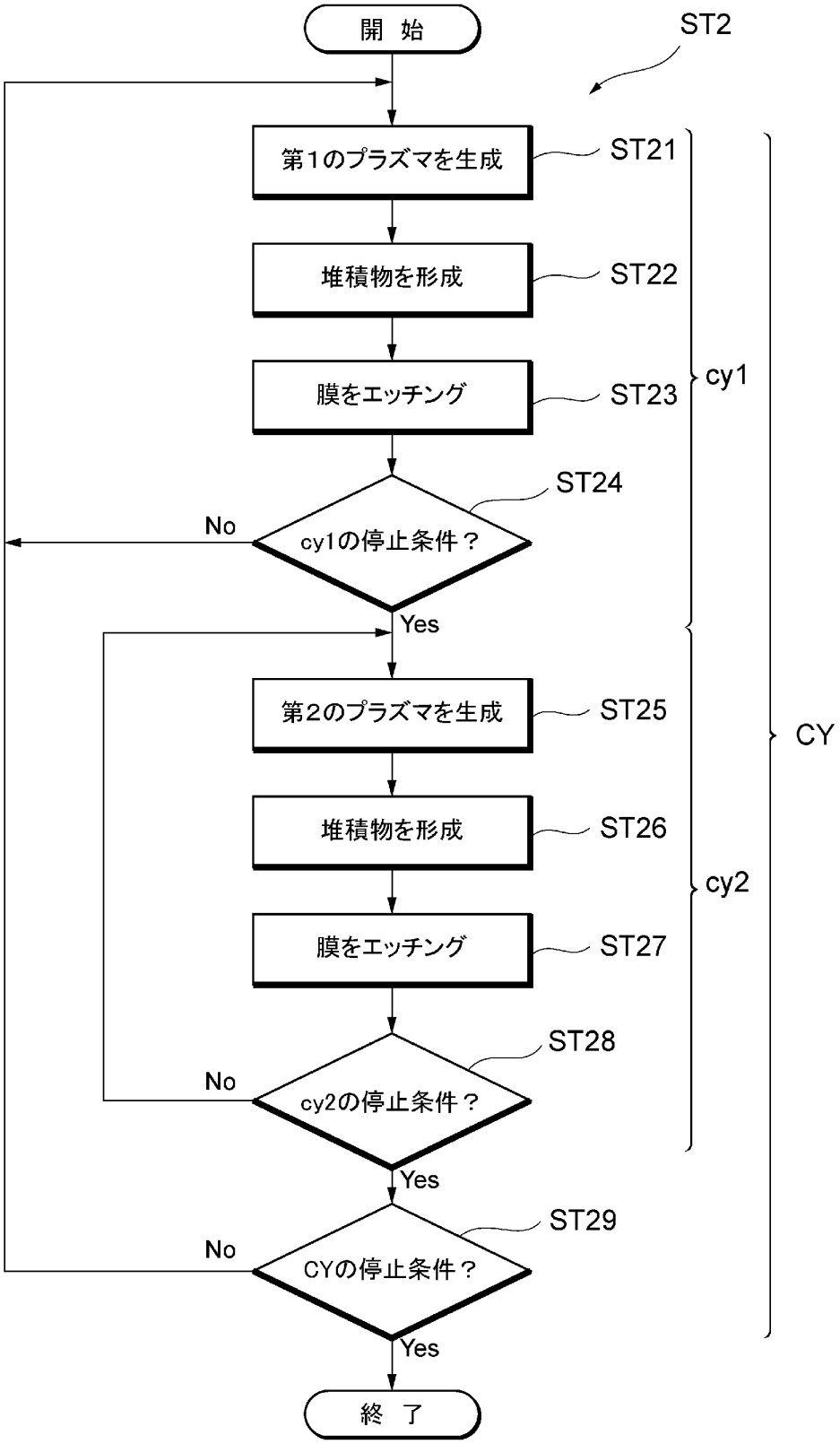
[図3]



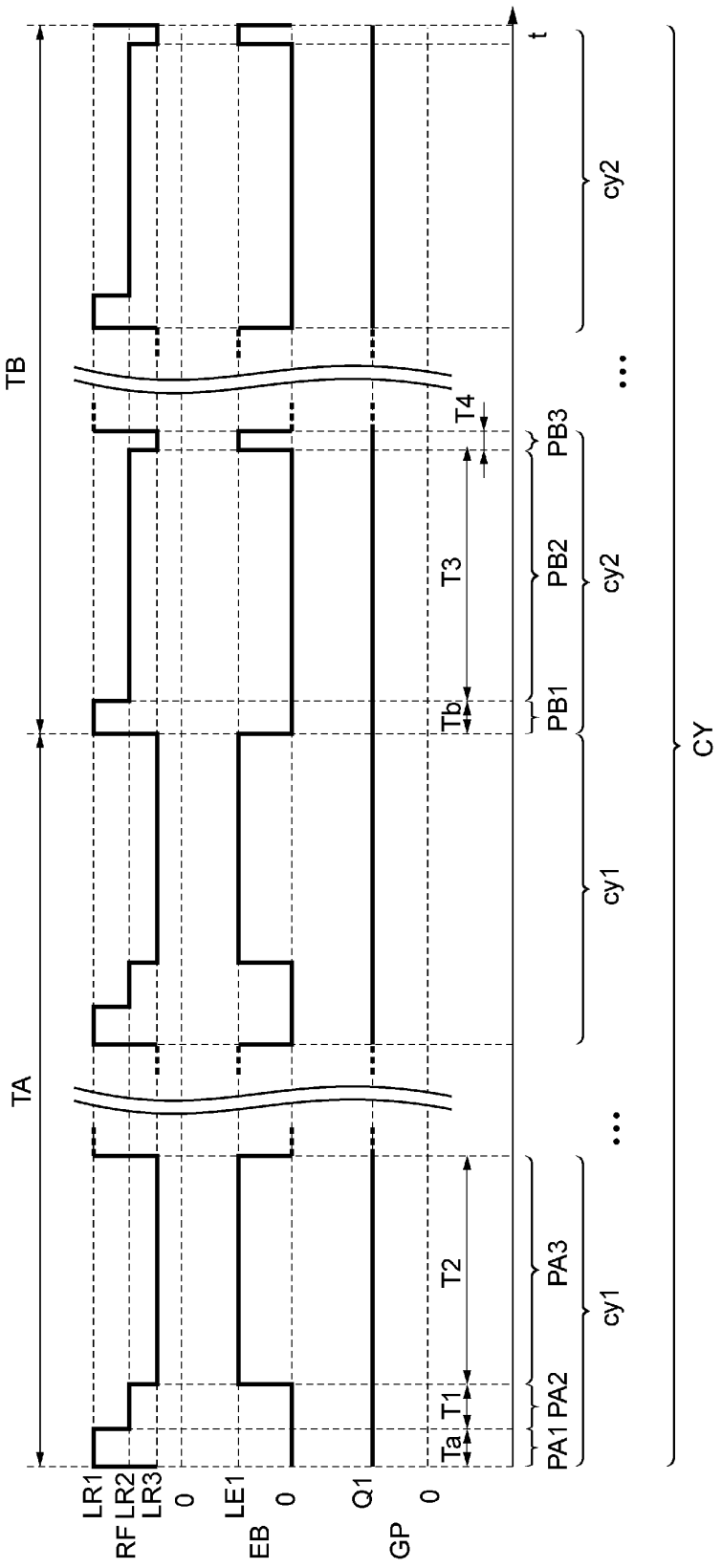
[図4]



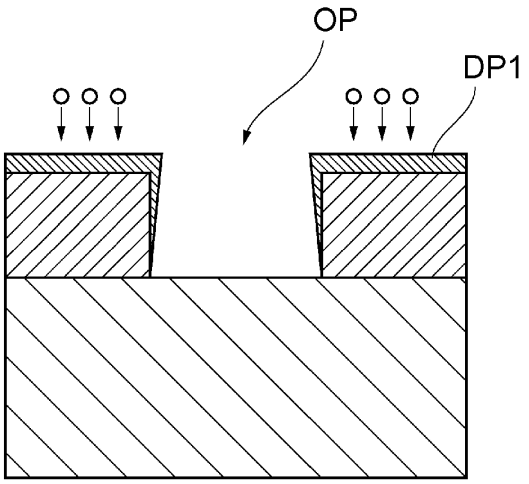
[図5]


開 始
ST2
第1のプラズマを生成
ST21
堆積物を形成
ST22
膜をエッチング
ST23
cy1
ST24
No
cy1の停止条件？
Yes
第2のプラズマを生成
ST25
堆積物を形成
ST26
膜をエッチング
ST27
cy2
ST28
No
cy2の停止条件？
Yes
ST29
No
CYの停止条件？
Yes
CY
終 了

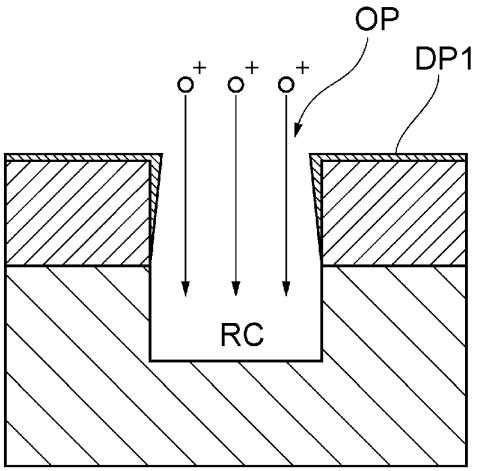
[図6]


LR1
RF LR2
LR3
0
LE1
EB 0
Q1
GP 0
t
TA
TB
Ta
T1
T2
T3
Tb
T4
PA1
PA2
PA3
PB1
PB2
PB3
cy1
cy2
CY

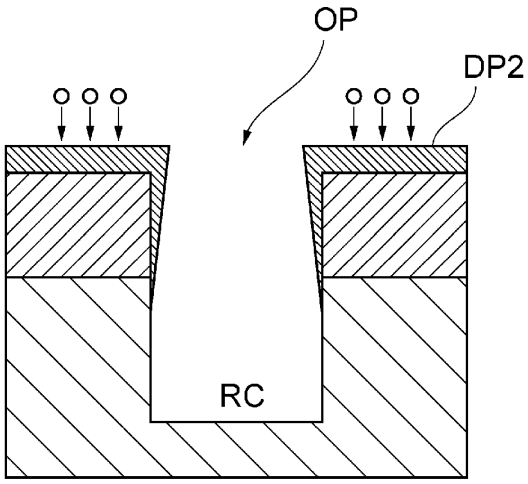
[図7A]



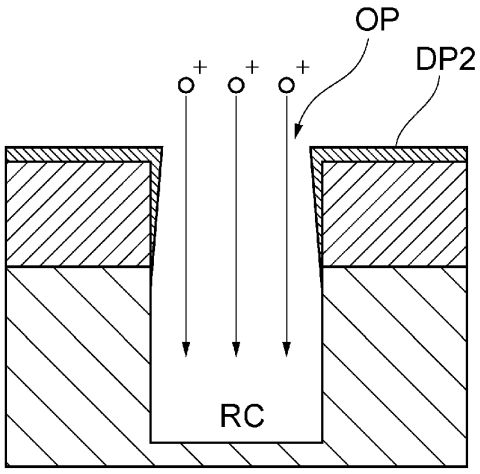
[図7B]



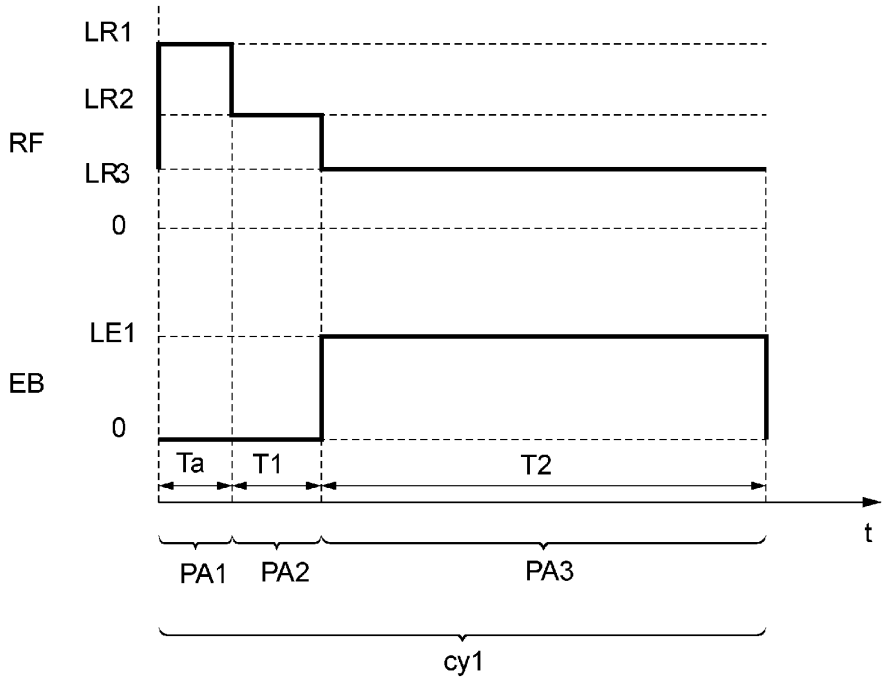
[図8A]



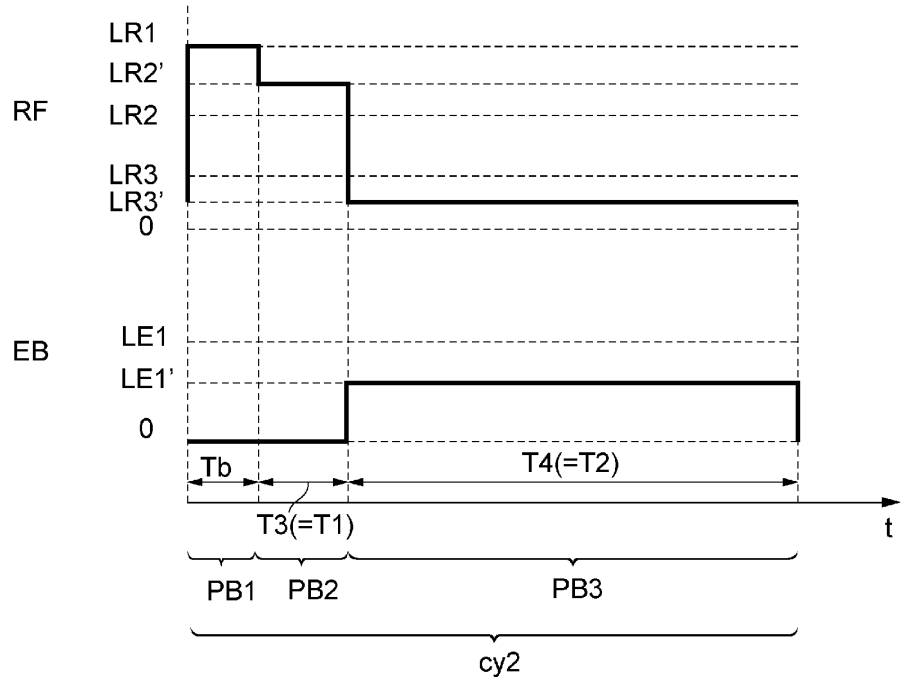
[図8B]



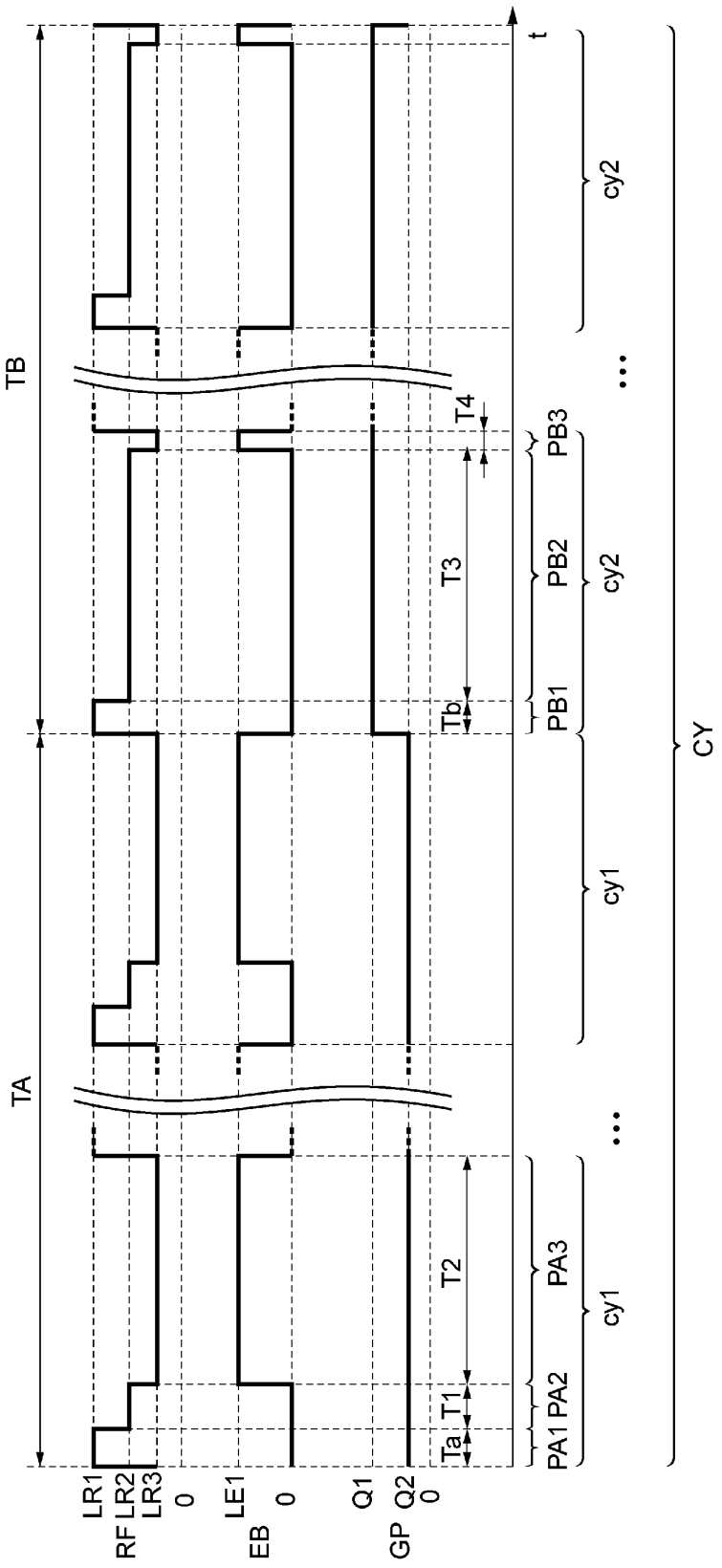
[図9A]


LR1
LR2
RF
LR3
0
LE1
EB
0
Ta
T1
T2
t
PA1
PA2
PA3
cy1

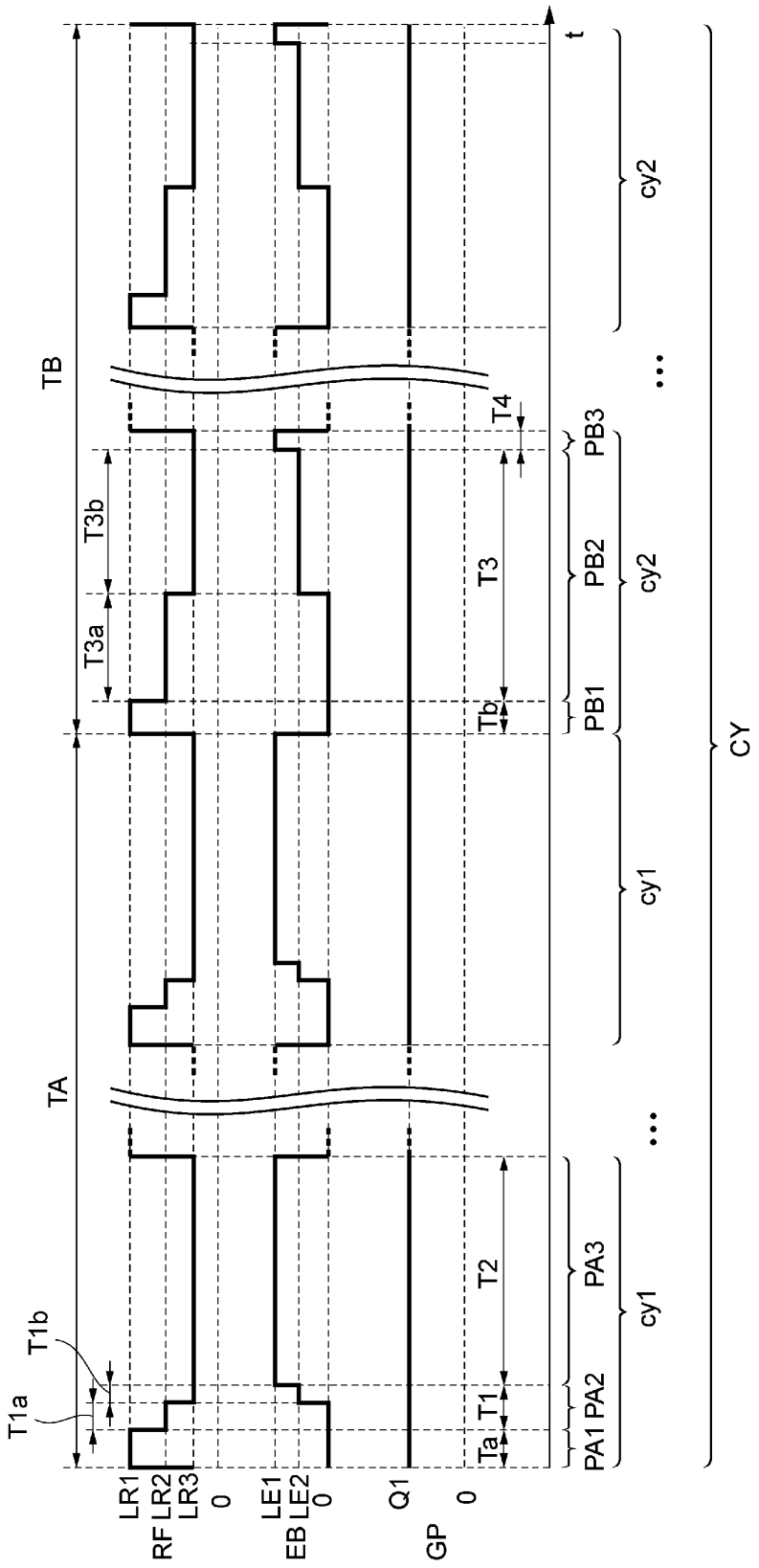
[図9B]


LR1
LR2'
RF
LR2
LR3
LR3'
0
LE1
EB
LE1'
0
Tb
T4(=T2)
T3(=T1)
t
PB1
PB2
PB3
cy2

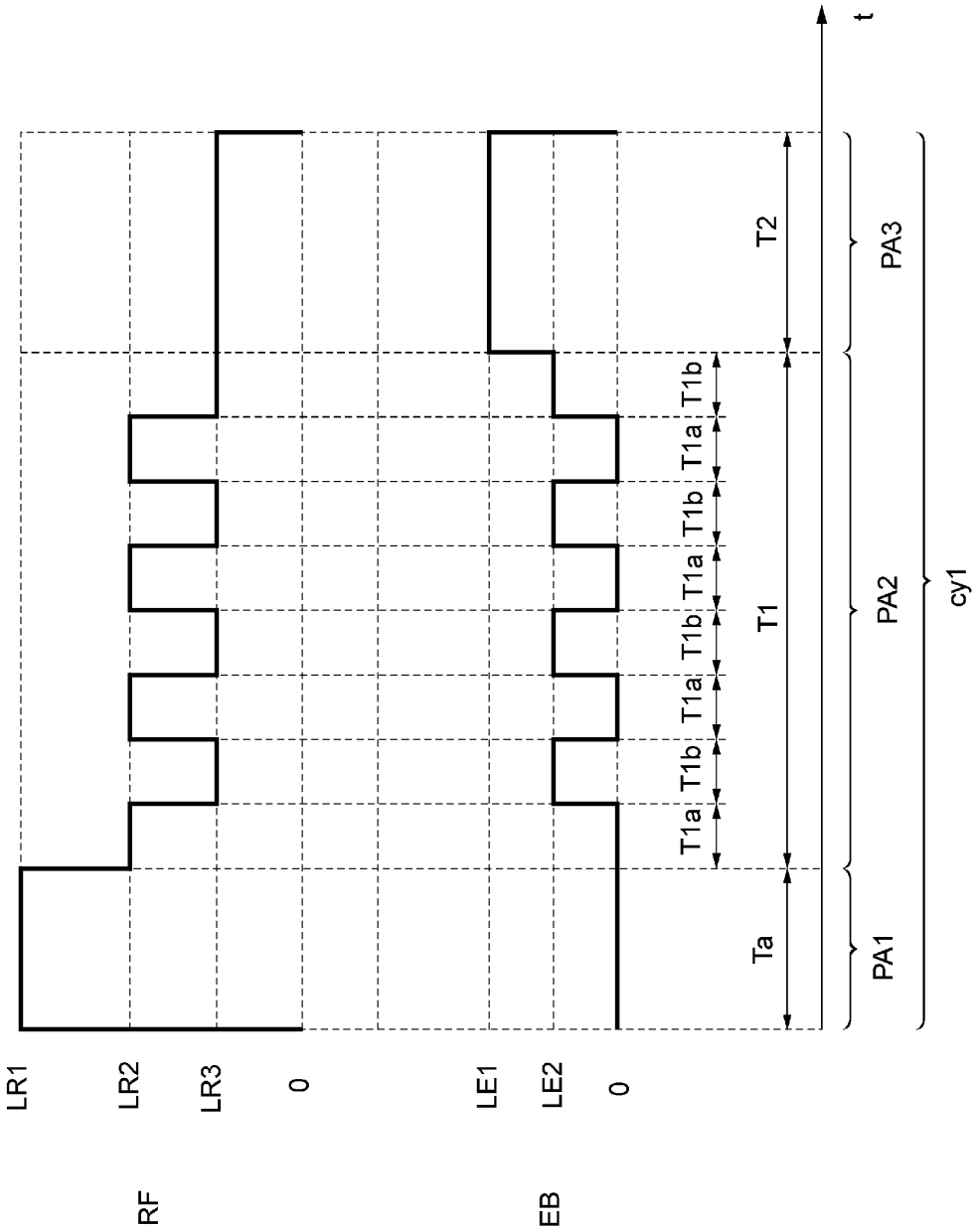
[図10]


t
TB
TA
T4
T3
Tb
T2
T1
Ta
PB3
PB2
PB1
PA3
PA2
PA1
cy2
cy1
CY
LR1
RF LR2
LR3
0
LE1
EB 0
Q1
GP Q2
0

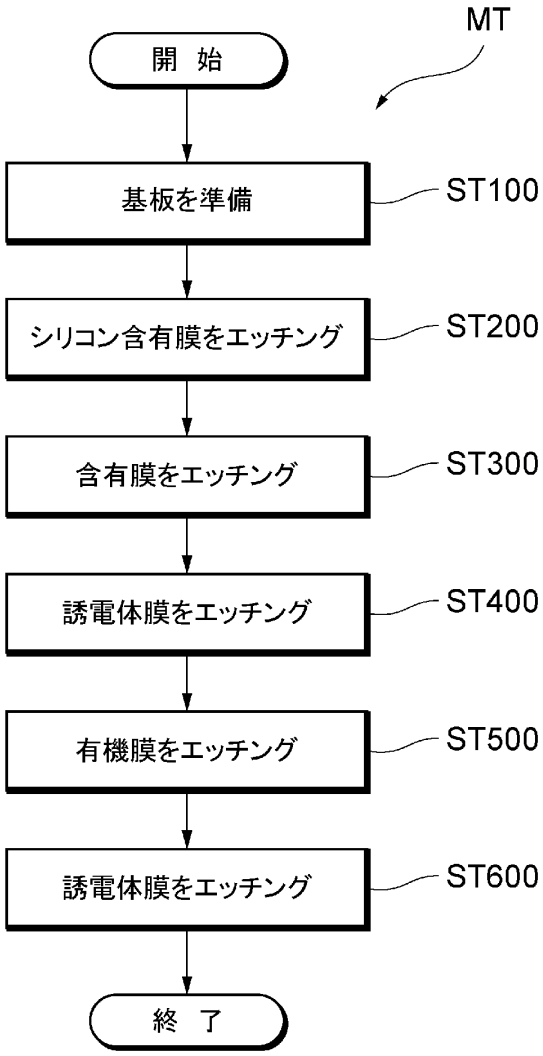
[図11]


t
TB
TA
T1a
T1b
T3a
T3b
T1
T2
T3
T4
Ta
Tb
cy1
cy2
CY
PA1
PA2
PA3
PB1
PB2
PB3
LR1
RF
LR2
LR3
0
LE1
EB
LE2
0
Q1
GP
0

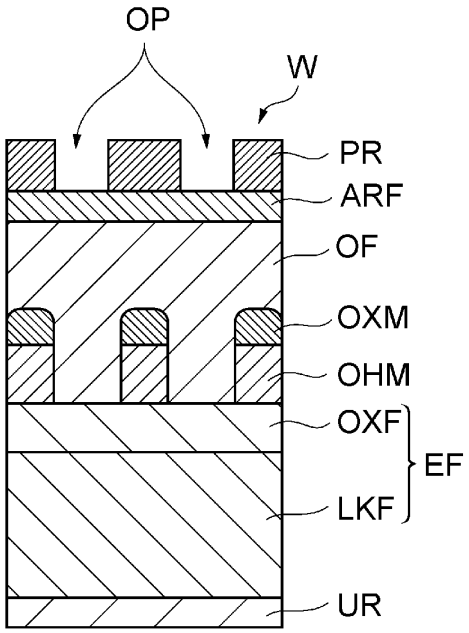
[図12]


t
T2
PA3
T1b
T1a
T1b
T1a
T1b
T1a
T1b
T1a
T1
PA2
cy1
Ta
PA1
LR1
LR2
LR3
0
LE1
LE2
0
RF
EB

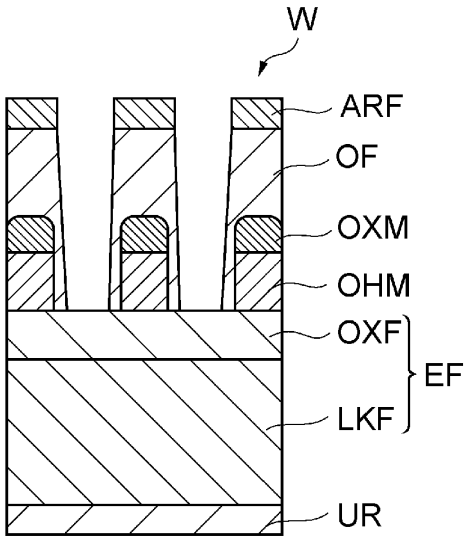
[図13]


MT
開 始
基板を準備
ST100
シリコン含有膜をエッチング
ST200
含有膜をエッチング
ST300
誘電体膜をエッチング
ST400
有機膜をエッチング
ST500
誘電体膜をエッチング
ST600
終 了

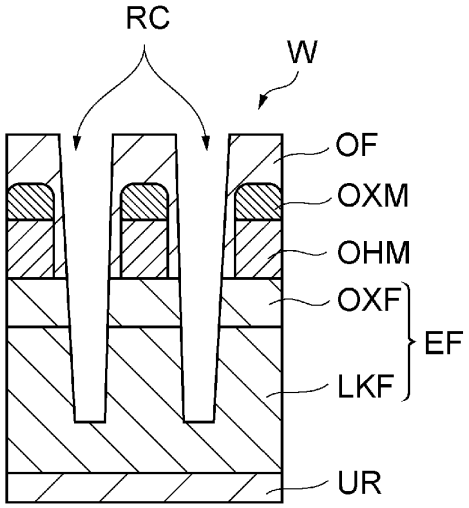
[図14A]



[図14B]



[図14C]



[図14D]

