

(19)
(12)

(KR)
(A)

(51) 。 Int. Cl. ⁷
C23C 16/48

(11)
(43)

2001 - 0108968
2001 12 08

(21) 10 - 2000 - 0030050
(22) 2000 06 01

(71) ()

49

373 - 1

(72)

107 402

722 - 1 1 102

526 - 3 LG 102 202

1065 112 203

964 - 5 517 1501

281 107 102

2 632 - 94 101 502

107 1504

(74)

:

(54)

through - put) 가 (t
 가 300mm 가

(diode) (microwave) (radio frequency
 wave) 가 가
 (Electron Cyclotron Resonance; ECR) 가 가
 가, (inductively coupled) (helico
 n wave) (excite) 가 가
 RF(Radio Frequency) 가

1 (100) 1 가
 (100) (108), (120)
 (110), (110) (116) (chuck
 ; 114) (110) (104) (106) (10) (10
 4) (110) (106) (104) (capac
 itive coupling) 가 (inductive coupling)
 (104) 1 (102) , (114)
 2 (122) 1 2 (102, 122) 20MHz
 RF (104) (114) 가

(100) (110) 가
 (120) 가 (108)
 (110) 가 1 (102)
 13.56MHz RF (104) 가 , RF 가 (104)가
 (110)

, 가 (104) (inductively coupled radical)
(116) , 2 (122) (114) 가

2a
2a , (102a) (104a) (103a)
, (104a)
가 , 가 ,
, (voltage drop)가 , 가

2b 2a 가 2b , (102a) (Z_1, Z_2, Z_3, Z_4)
가 ,
2a

2c
2c , 3 (102b, 102c, 102d) 3
(104b, 104c, 104d) , 가
가 , 가
, (impedance matching)
(103b, 103c, 103d)

20MHz , 가 가

가

가

, 20 300MHz

:

;

가

가 , 3d 3e

가 가 가 , 20 300MHz 1.5 2.5eV

4 3a 가 가 가 가 가
4 가 (20 300MHz)

5a 13.56MHz, 2kW 가
2mTorr C₄F₈ Ar CFX 3eV

5b 100MHz, 2kW 가
가 5a 5a 5b 100MHz 2mTorr
가 가 가 2eV

5a 5b 가 CF₂, CF₃ F CF_x F

가 가

가 가

6 가 가

20 300MHz 가 가 가

가 , CF_x
 , CF₂, CF₃ , F , CF_x F 가
 가

(57)

1.

20 300MHz

;

2.

1 , 가 가

3.

2 , 가, 가

4.

3 , 가 가가

5.

1 4 ,

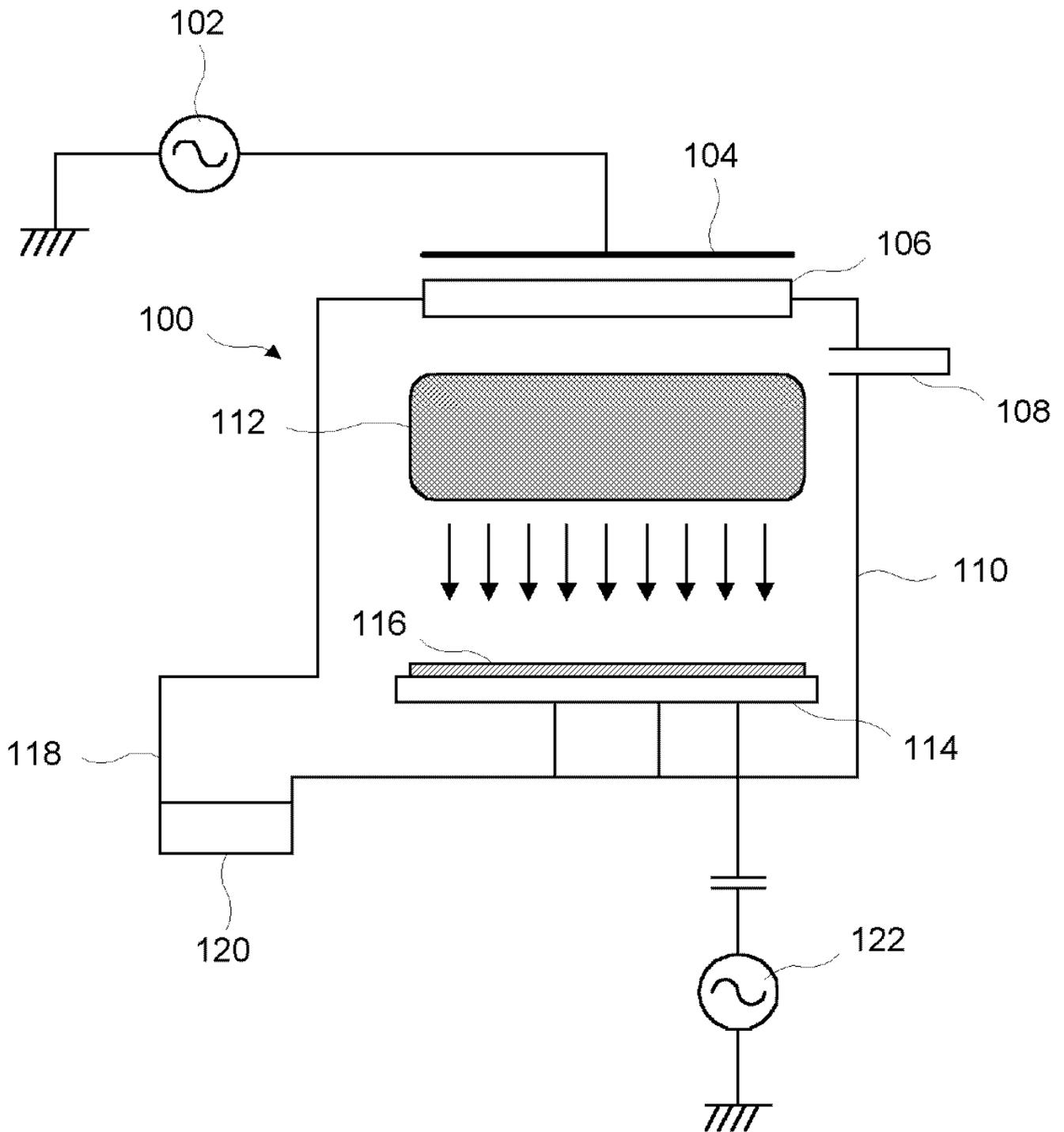
6.

5 , 가

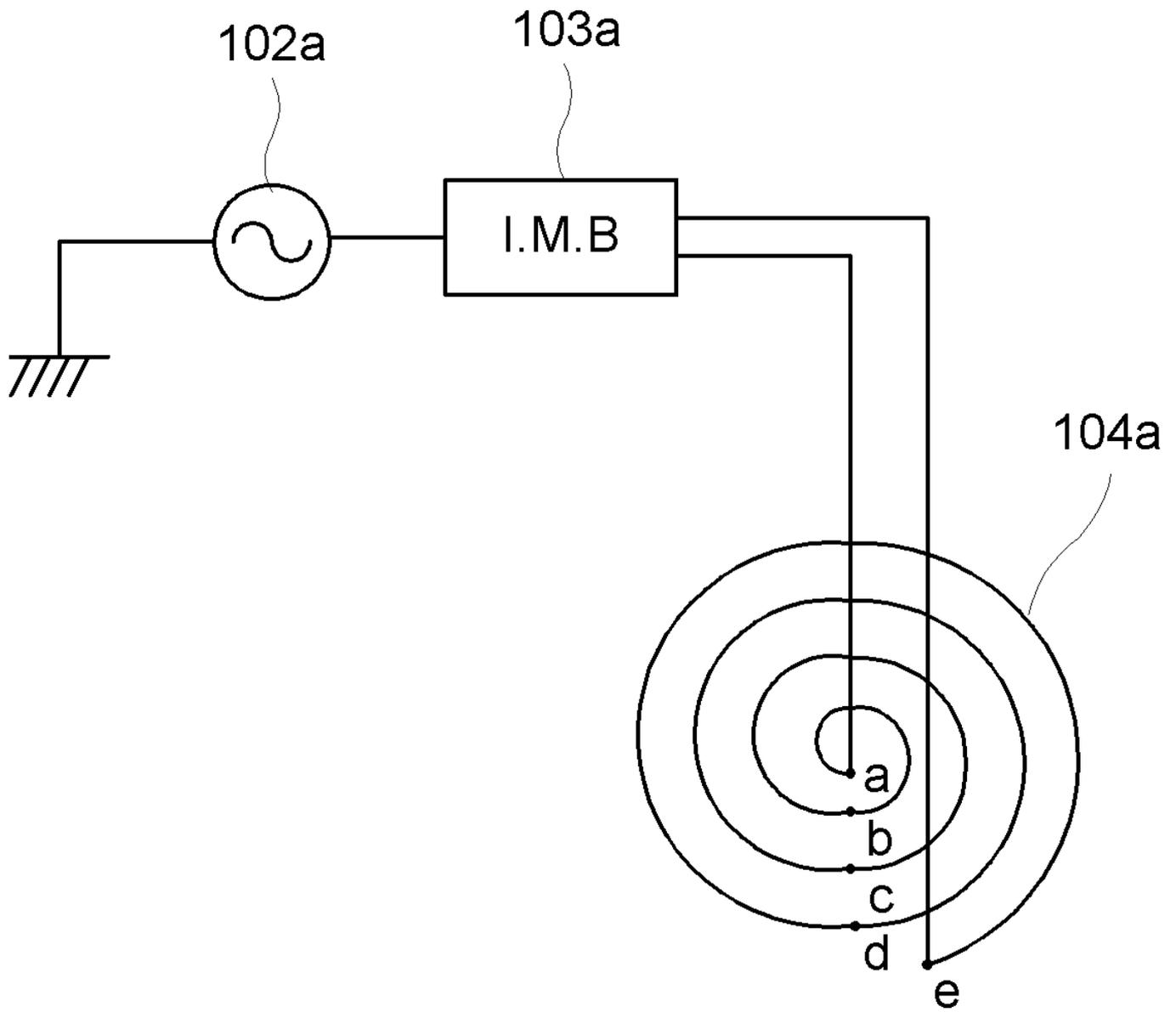
7.

6 , 20 300MHz

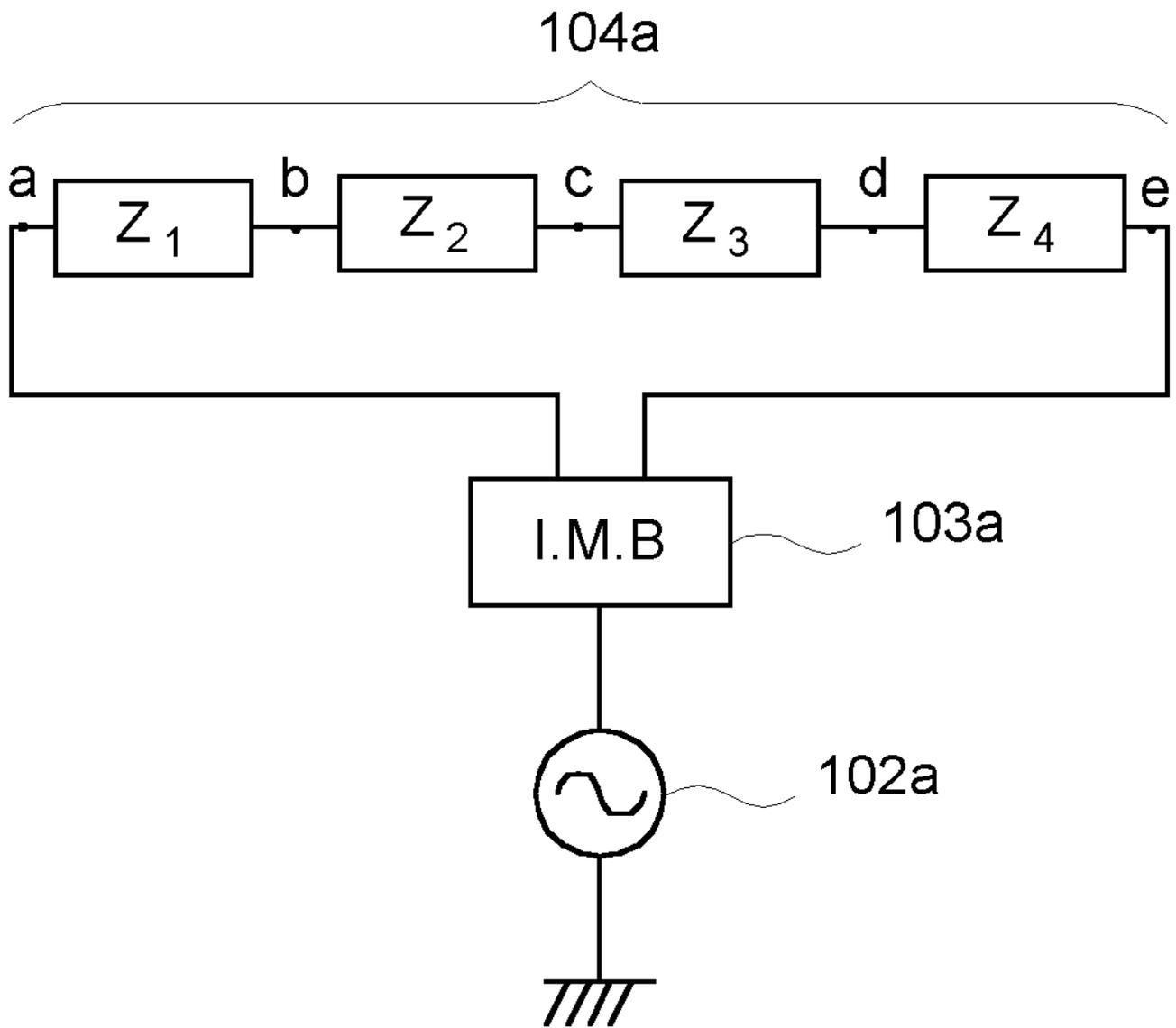
1



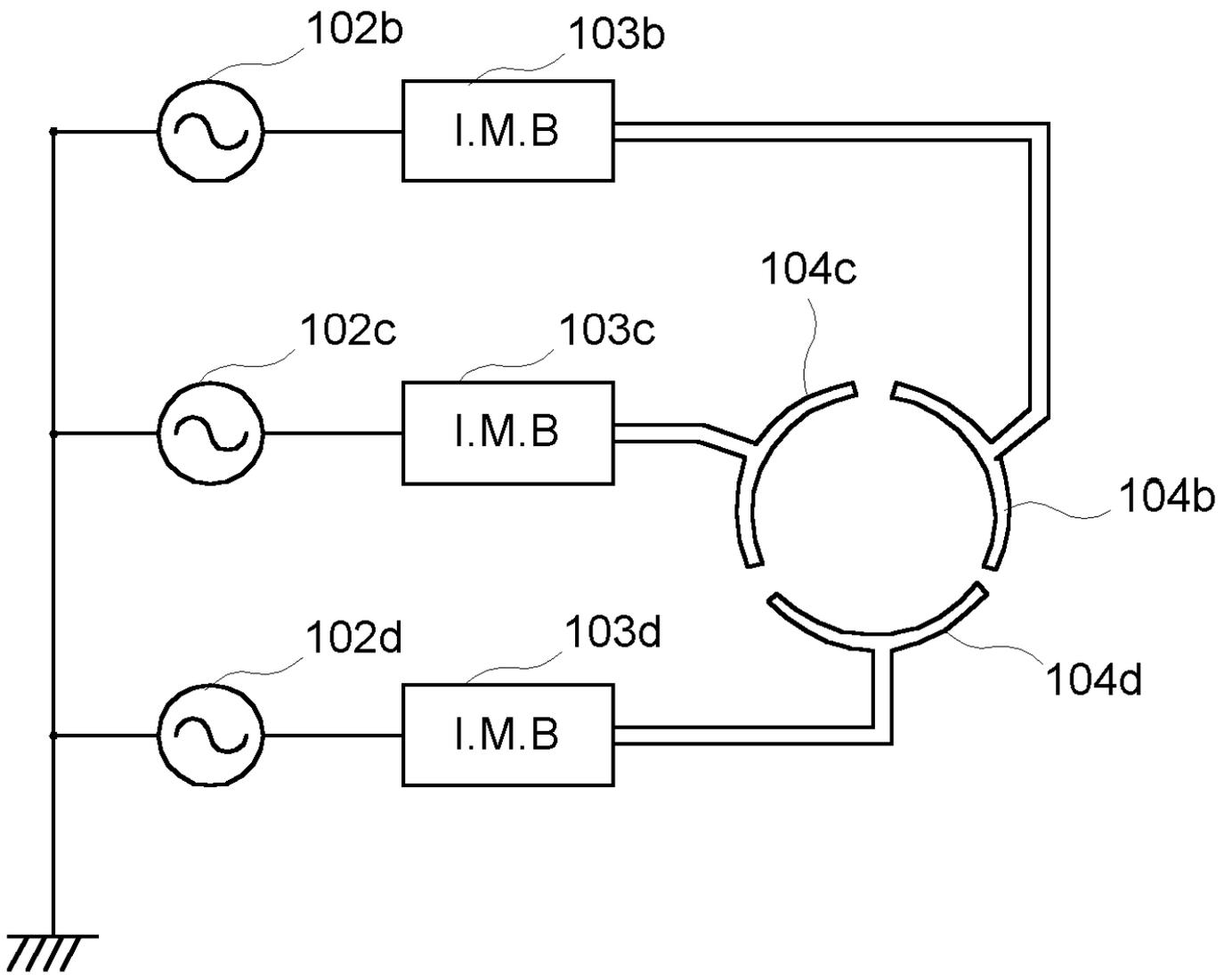
2a



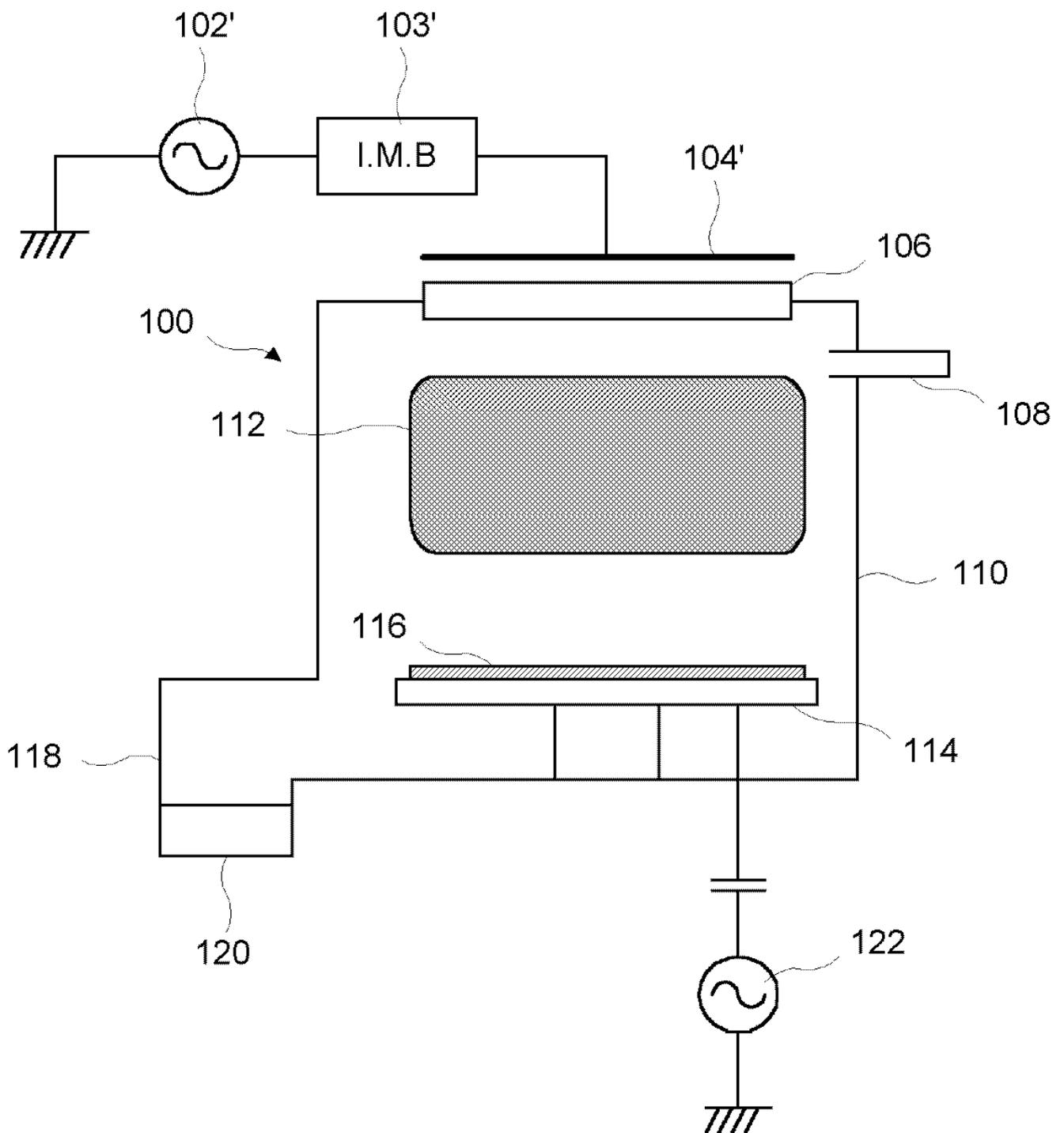
2b



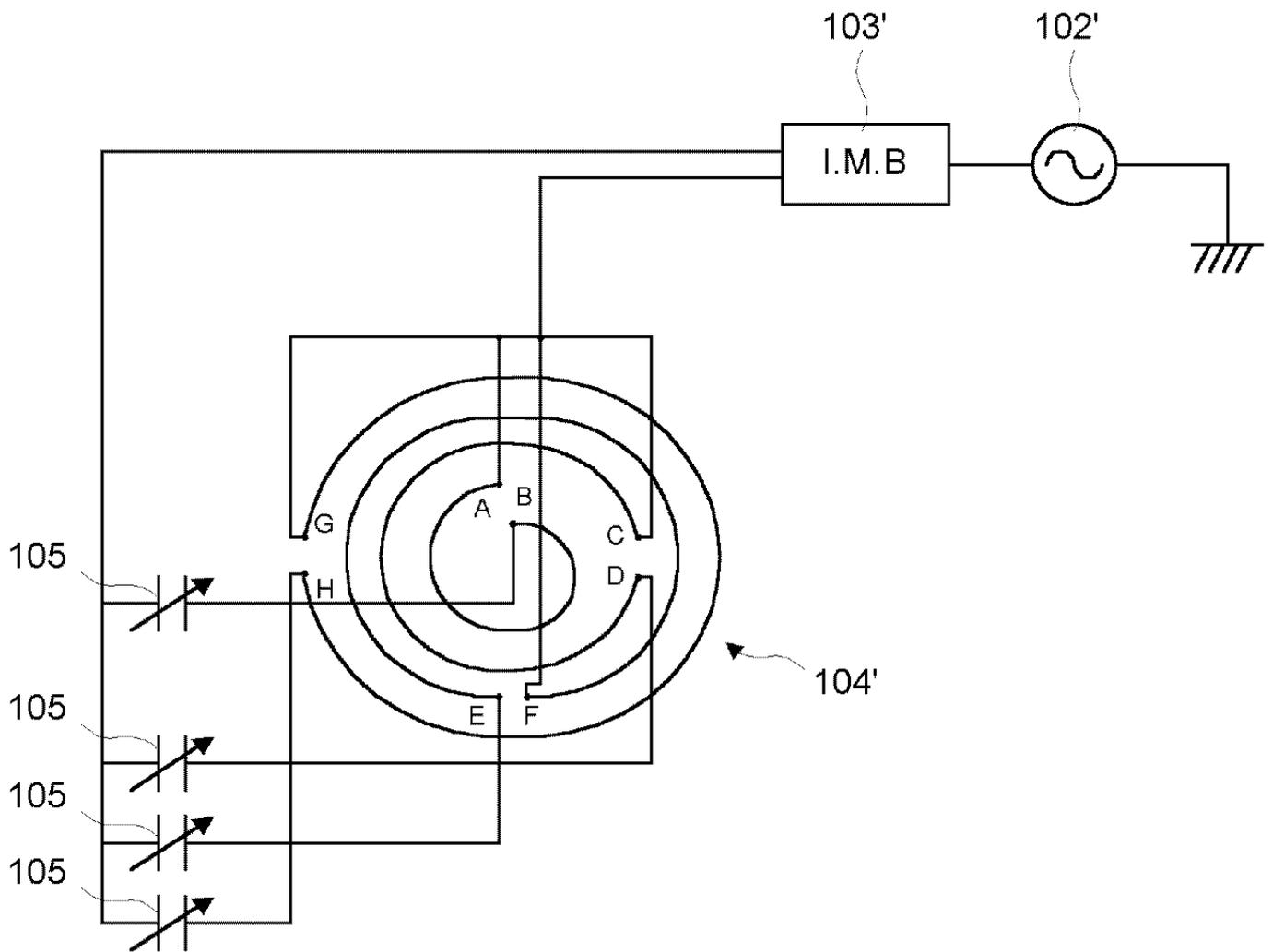
2c



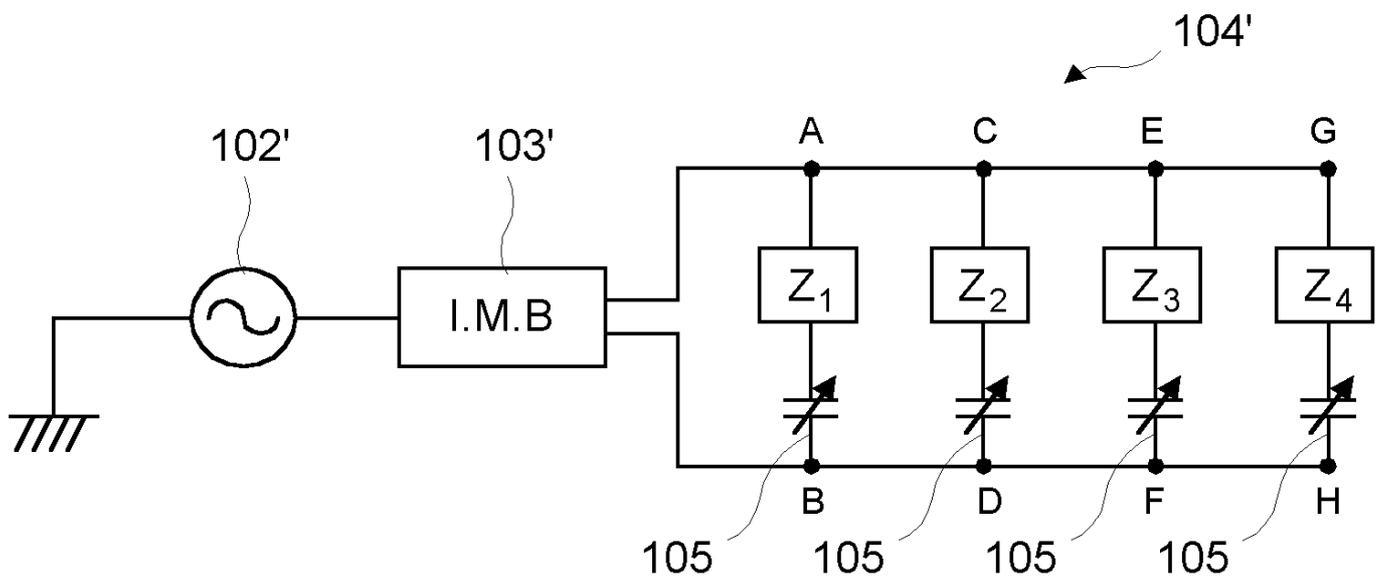
3a



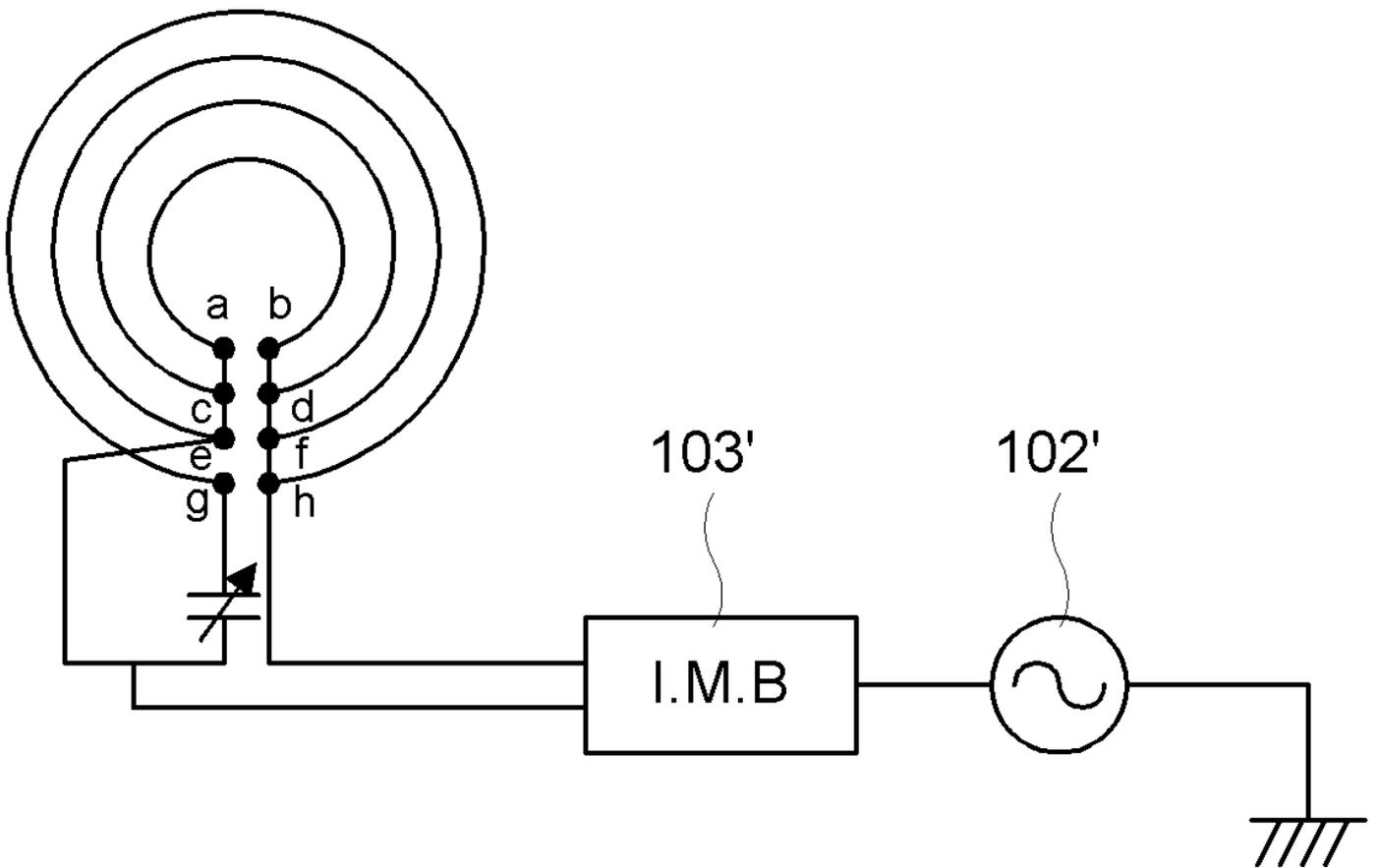
3b



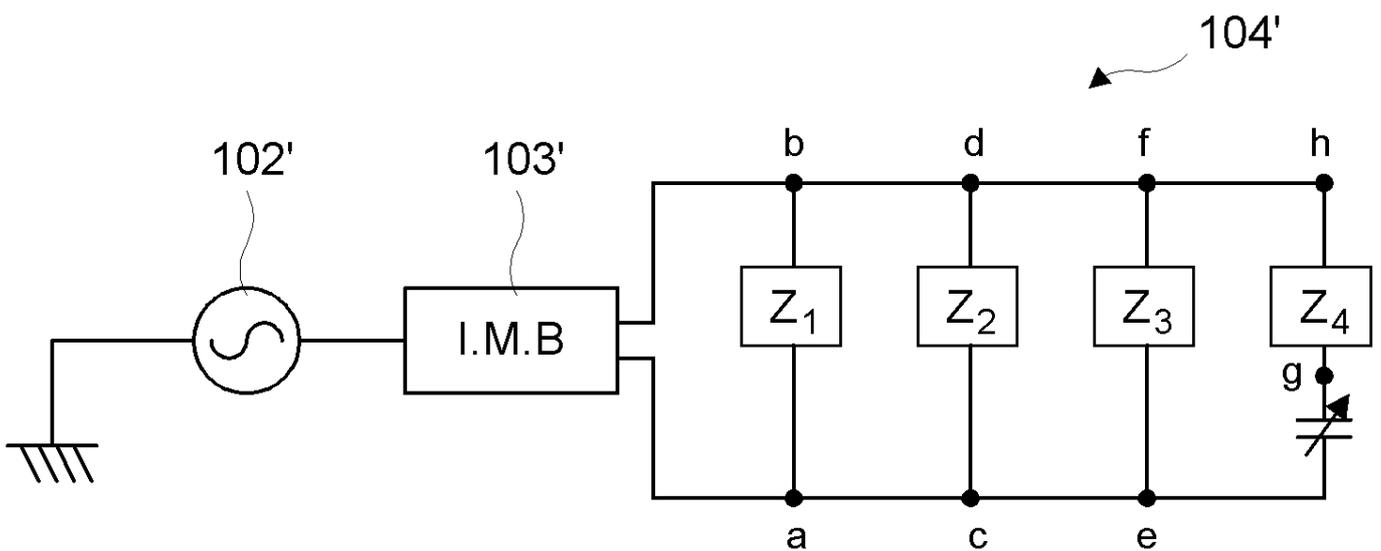
3c



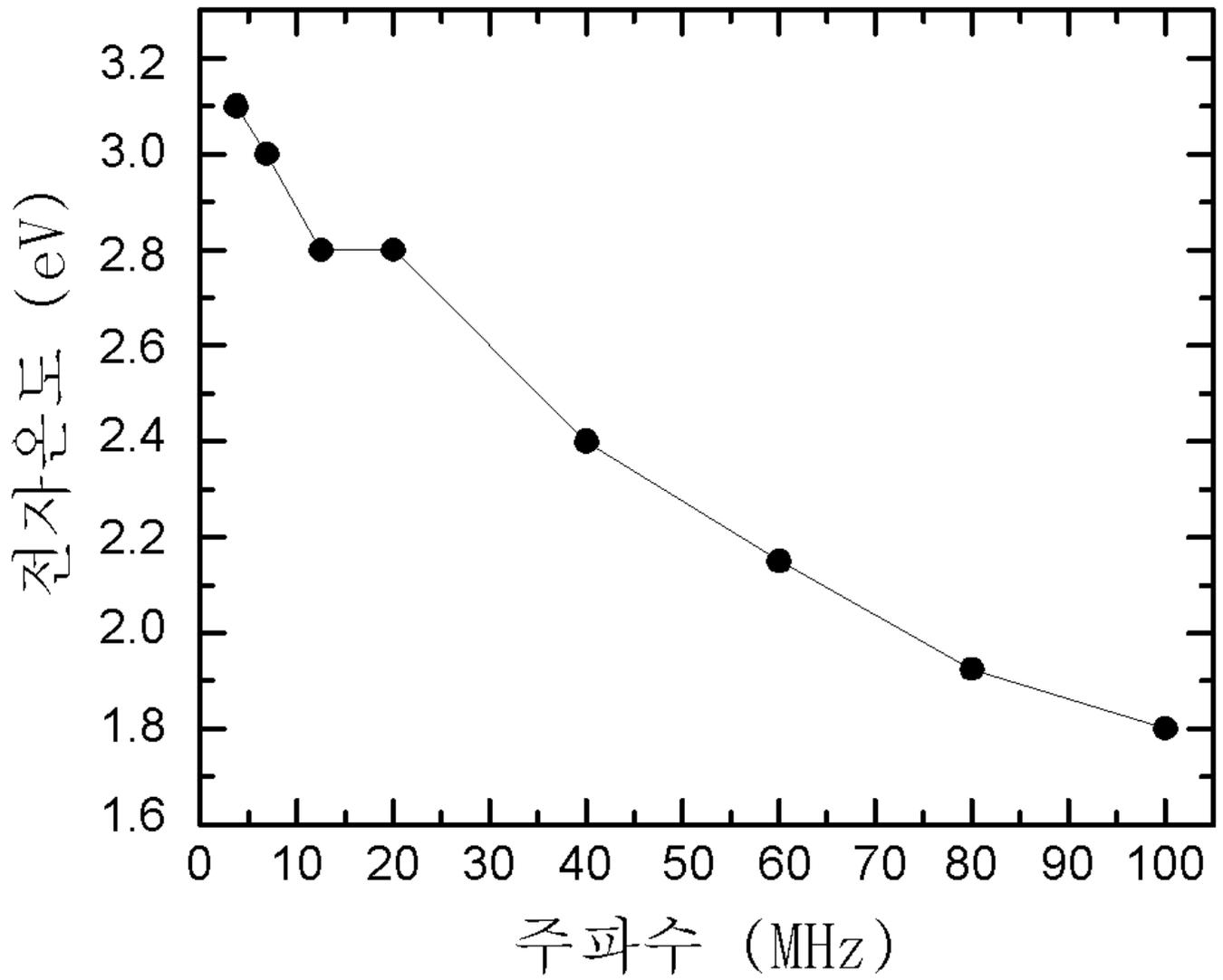
3d



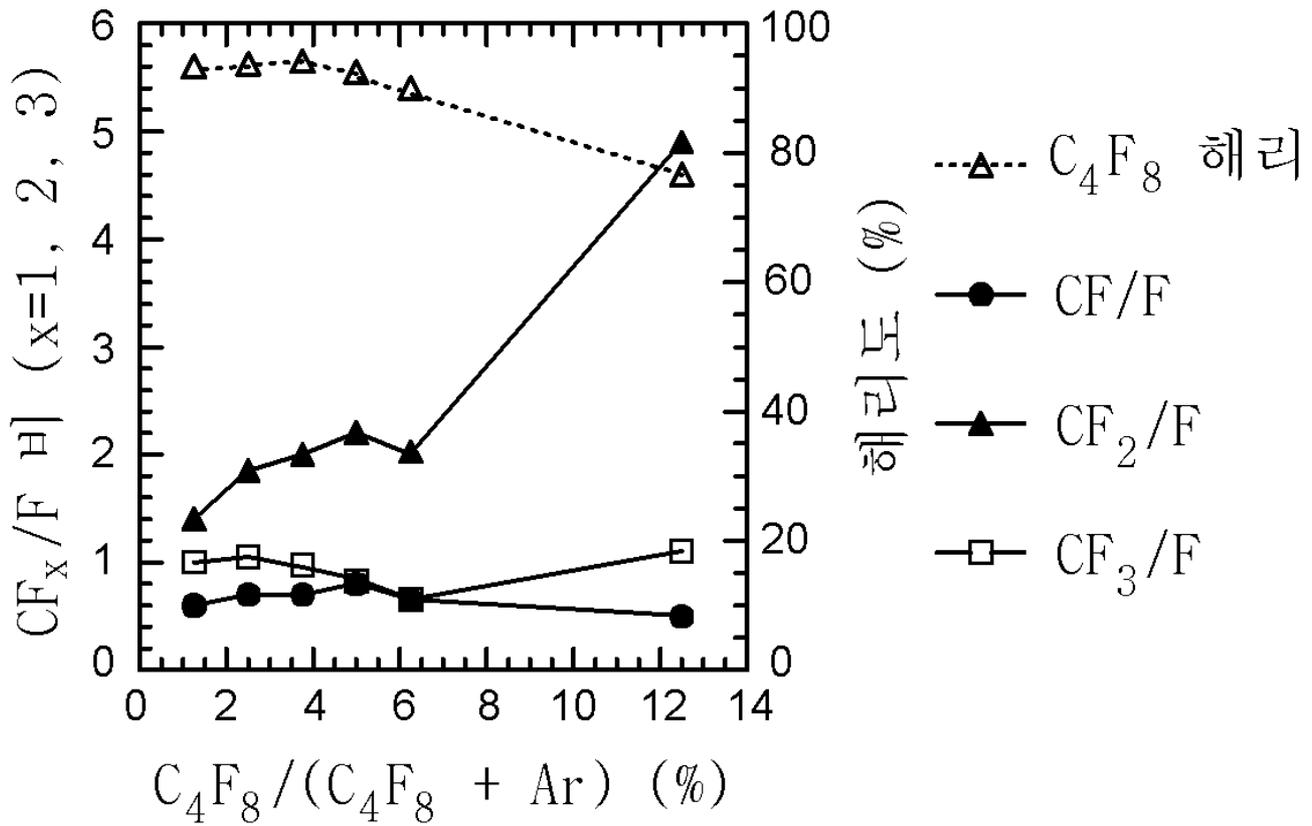
3e



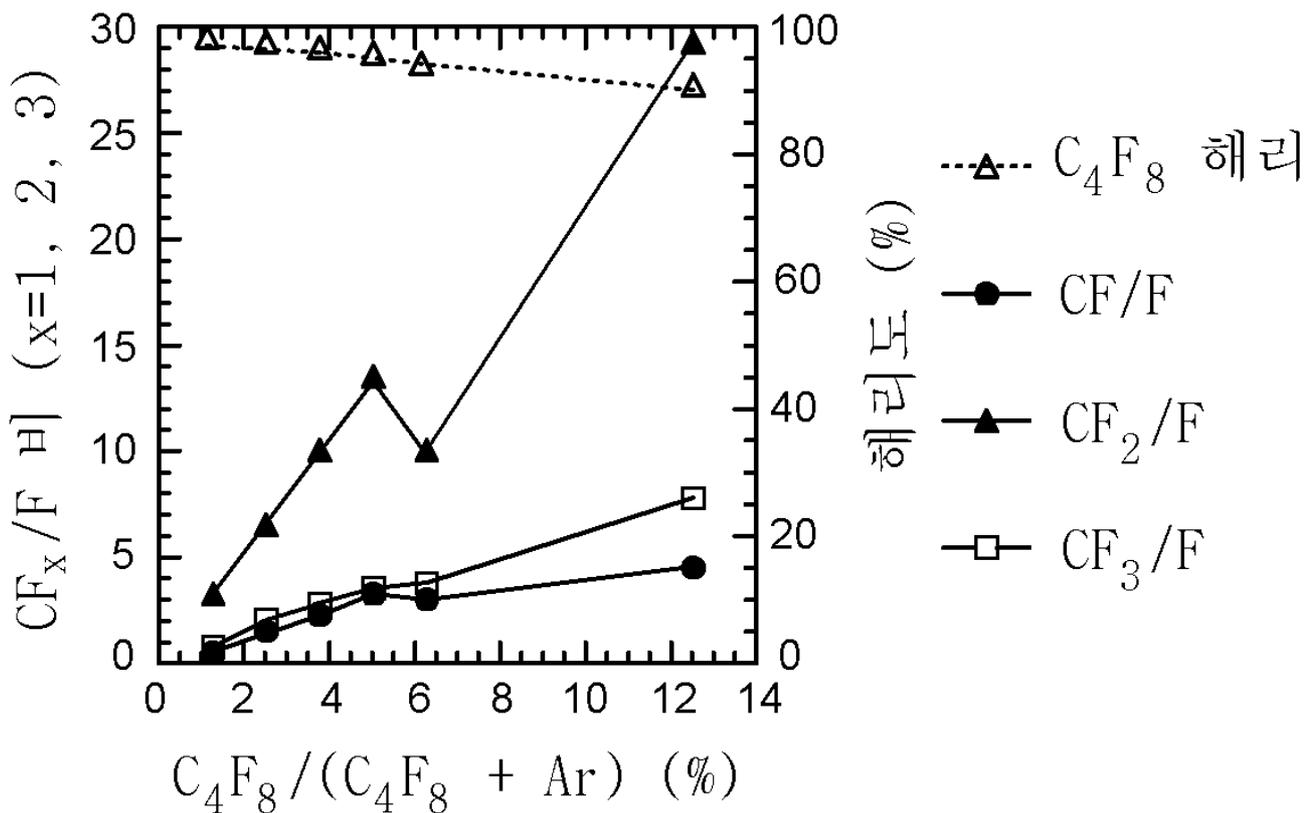
4



5a



5b



6

