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(12) (B1)

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(21) 10 - 1994 - 0027993 (65) 1995 - 0012637  
(22) 1994 10 28 (43) 1995 05 16

(30) 9312946 1993 10 29 (FR)  
(73) - 92800 - - - 4 - 8 10  
(72) 64121 -  
64170 ? 144 . .  
(74)

:

(54)

: - 1 가 ,  
, - 가 1 가 .





1

:

가

가

,가

-

가

1

가

1

가

“ ”

( )

- ( ) , 가

, ( ) ( )

( 10

).

mW/cm<sup>3</sup> 50mW/cm<sup>3</sup> , 80mW/cm<sup>3</sup> 500mW/cm<sup>3</sup> , 165

1

100 ,

3

50 ,

30

가

가 가

,가 ,

가

가

, 가 ,

1

가

가

1

가

SiO<sub>x</sub>

(HMDS)

가 , 1 가 , , , , , ,

가 , 가 ( )

0Hz( ) GHz, 2.45GHz .

, (PMMA) - .

가 1 8 , ( ) ( ) , ( ) , ( ) , ( ) , ( ) ,

; ( ) , , ,

가 - 0.1 $\mu$ m  
2.5 $\mu$ m 25 $\mu$ m, 5 $\mu$ m

I.

a)

(RF) 가 43cm, 19cm  
가 10cm .

20cm 3.5cm .  
13.56MHz . 300

W 50W ; ,  
0 .

0.02Pa 1 1 2 ,  
(Penning)  
, 0.013Pa 133Pa 가 MKS .  
1 . 1  
22m<sup>3</sup>/h .

b)

SiO<sub>x</sub> (HMDS) .

11.

a)

- 1      0.67Pa

b)

- 10      20

$$[ \quad \quad \quad ( \quad \quad 2, 3) : ]$$

- $p_{Ar} = 17 \text{ Pa}$

- : 10

- RF : 247.5mW/cm<sup>3</sup>

[ ( 4,5,6,7 & 8)]

- $pO_2 = 4.8 \sim 11.0 \text{ Pa}$

- : 10~20

- RF : 165mW/cm<sup>3</sup>

c)

d)

e)

- 1      0.67Pa

- 2      0.02Pa

f)

[ ]

가  
RF . 가 .  
; , .

가 가 0.67Pa .

g)

가 ( ) . ,

가 4.0 5.0 $\mu$ m 가 ( , RF  
) 가 ( 2 3  
( 4,5,6,7 8 1 ) ,

가 가  
:

가 (Taber)

III.

7E ISO 3537). ( ASTM D - 1044 DIN 5234

500g ( 55rev/ ). ( CS - 10F) 가

(Ta) (To)  
:

$$\% \text{ 탁도 } = \frac{T_o - T_a}{T_o} \times 100$$

200

( 200 1 ).

%

/ :

-

-

가 , % 가 , 가

- , ( ) ,
- 1 PMMA ,
- PMMA  $O_2$  PMMA ,
- ( 2 ).
- 2 PMMA ,
- $O_2$  PMMA ( 3 )
- 3 PMMA ,
- PMMA ( 4 ).
- 4 PMMA ,
- 2  $O_2$  PMMA ( 5 ).
- 5 PMMA ,
- PMMA ( 7 ).
- 6 / ( ; Kamax, Rohm & Haas )
- Kamax , Kamax  $O_2$  .
- [ 1 : ]
- ; (PMMA) ,
- ( ) .
- [ US - A - 4,830,873 ]
- (HMDS) , 60 :
- pHMDS : 3.3Pa
  - : 60
  - RF : 41mW/cm<sup>3</sup>
- [ ]
- 30 , ( $O_2$ ) (He) , 가 .
- pHe : 24.7Pa - pO<sub>2</sub> : 6.7Pa - pHMDS : 3.3Pa
  - : 180



- RF :  $41\text{mW/cm}^3$

$4.1\mu\text{m}$  .

PMMA

5 10

PMMA

[ 2 ]

1

PMMA

( )

[ ]

-  $\text{pO}_2$  :  $6.5\text{Pa}$

- : 30

- RF :  $165\text{mW/cm}^3$

[ ]

1

$4.0\mu\text{m}$  .

1

PMMA(

1

)

PMMA

PMMA

, 가

(

가

[ 3 : ]

1

PMMA

( )

( )

[ ]

-  $\text{pO}_2$  :  $5.7\text{Pa}$

- : 30

- RF :  $165\text{mW/cm}^3$

- : 530

[ 3 ]

1 .  $4.1\mu\text{m}$  .

2 , P  
MMA( 2 )  
PMMA .

0 ;

PMMA - ; EP  
- A - 0,254,205 .

[ 4 ]

1 . ( ) PMMA .

[ 5 ]

-  $\text{pO}_2$  : 6.7Pa

- : 60

- RF :  $41\text{mW}/\text{cm}^3$

[ 6 ]

- pHMDS : 7.2Pa  $\text{pO}_2$  : 4.8Pa

- : 59

- RF :  $206\text{mW}/\text{cm}^3$

$5.5\mu\text{m}$  .

3 , - PMMA( 4  
) - PMMA

( $41\text{mW}/\text{cm}^3$ ) PMMA (60 ) , ;

( ) ,

[ 5 ]

1 . PMMA ( ) .

[                    ]

-  $pO_2$ : 4.8Pa

-                    : 3

- RF                    : 206mW/cm<sup>3</sup>

[                    ]

50                    4                    .                    4.7 $\mu$ m                    .

4                    ,                    PMMA                    -                    PMMA(                    4                    .  
)                    -                    PMMA                    .  
(                    ,                    )

[                    6 :                    ]

1                    .                    PMMA                    (                    )                    .  
가                    .

[                    ]

-  $pO_2$ : 6.3Pa

-                    : 300

- RF                    : 49.5mW/cm<sup>3</sup>

[                    ]

(HMDS)                    . RF                    가                    206mW/cm<sup>3</sup>                    . ,  
4                    (                    )                    .                    ,                    50

PMMA                    가                    .

PMMA                    .                    가

[                    7]

1                    .                    PMMA                    (                    )                    .  
가                    .

[                    ]

-  $pO_2$ : 5.2Pa

- : 30

- RF : 165mW/cm<sup>3</sup>

[ ]

(HMDS) . RF 가 206mW/cm<sup>3</sup> . ,  
4 ( ) . 60

5.0 $\mu$ m .

5 , PMMA( 4  
) - PMMA

PMMA (

[ 8]

1 /  
( : Kamax) ( )

[ ]

- pO<sub>2</sub> : 10.9Pa

- : 30

- RF : 165mW/cm<sup>3</sup>

[ ]

- pHMDS : 8.0Pa pO<sub>2</sub> : 10.9Pa

- : 82

- RF : 206mW/cm<sup>3</sup>

5.2 $\mu$ m .

6 , - Kamax(  
) - Kamax

(57)

1.

1  
 , : a)  
 - 1 가 ,  
 /cm<sup>3</sup> ( 50mW  
 , b) 가 1 100 1 )  
 .

2.

1 , - 가 .

3.

1 2 , 가 가 , , , 가 ,  
 , .

4.

1 2 , 가 가 , 가 1  
 .

5.

4 , 가 가 .

6.

1 2 , 1 , , , 가 , 1 가 ,  
 .

7.

6 , , ,  
 .

8.

7 , .

9.

1 2 , 가 가 .

10.

4 , 가 ( ) ( ) .

11.

1 2 , 가 0Hz GHz .

12.

1 2 , , , .

13.

12 , , .

14.

12 , 1 8 ( ) ( ) , ( ) , ( ) , 가 , , .

15.

12 , .

16.

1 , 가  $80\text{mW/cm}^3$   $500\text{mW/cm}^3$  .

17.

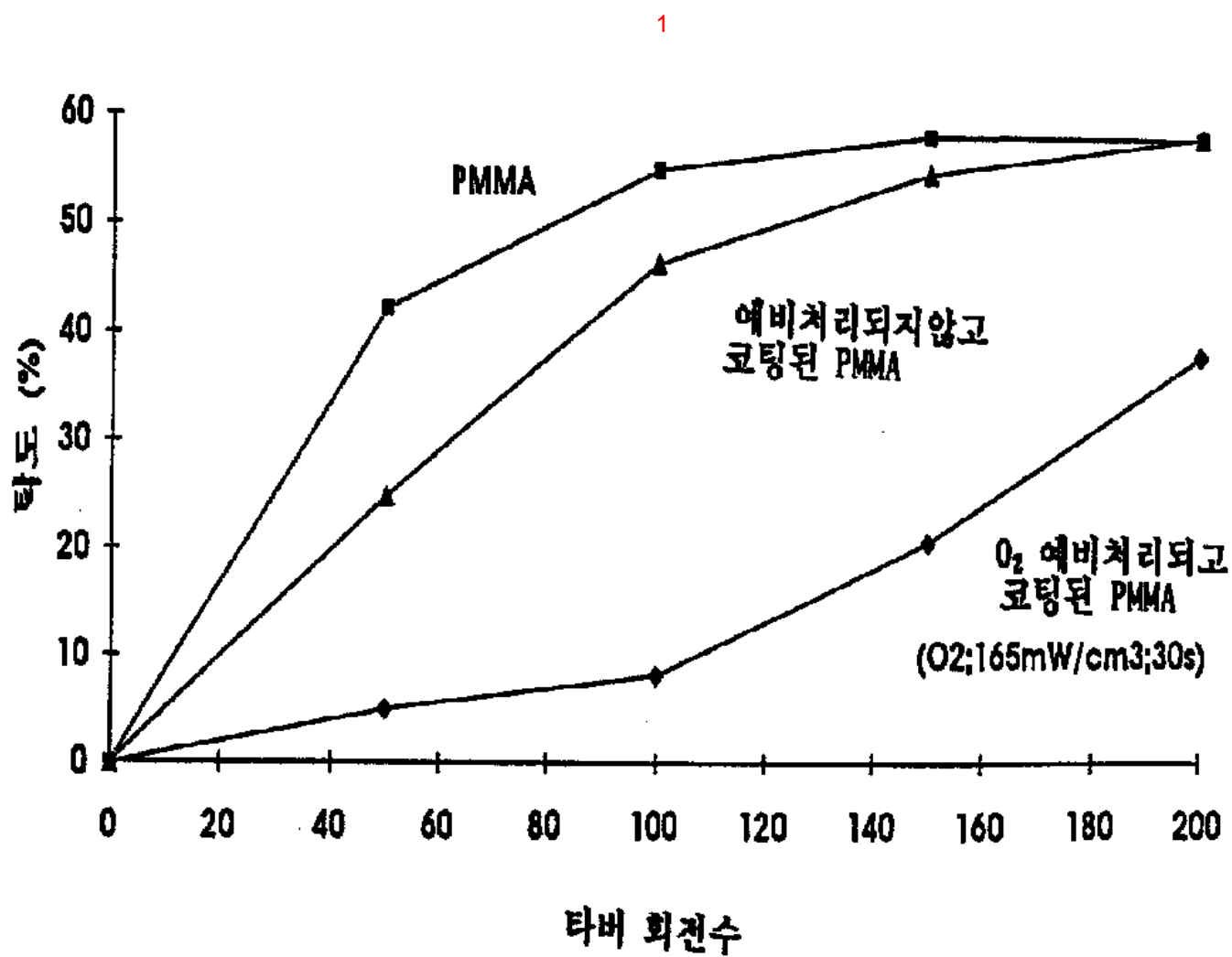
16 , 가  $165\text{mW/cm}^3$  .

18.

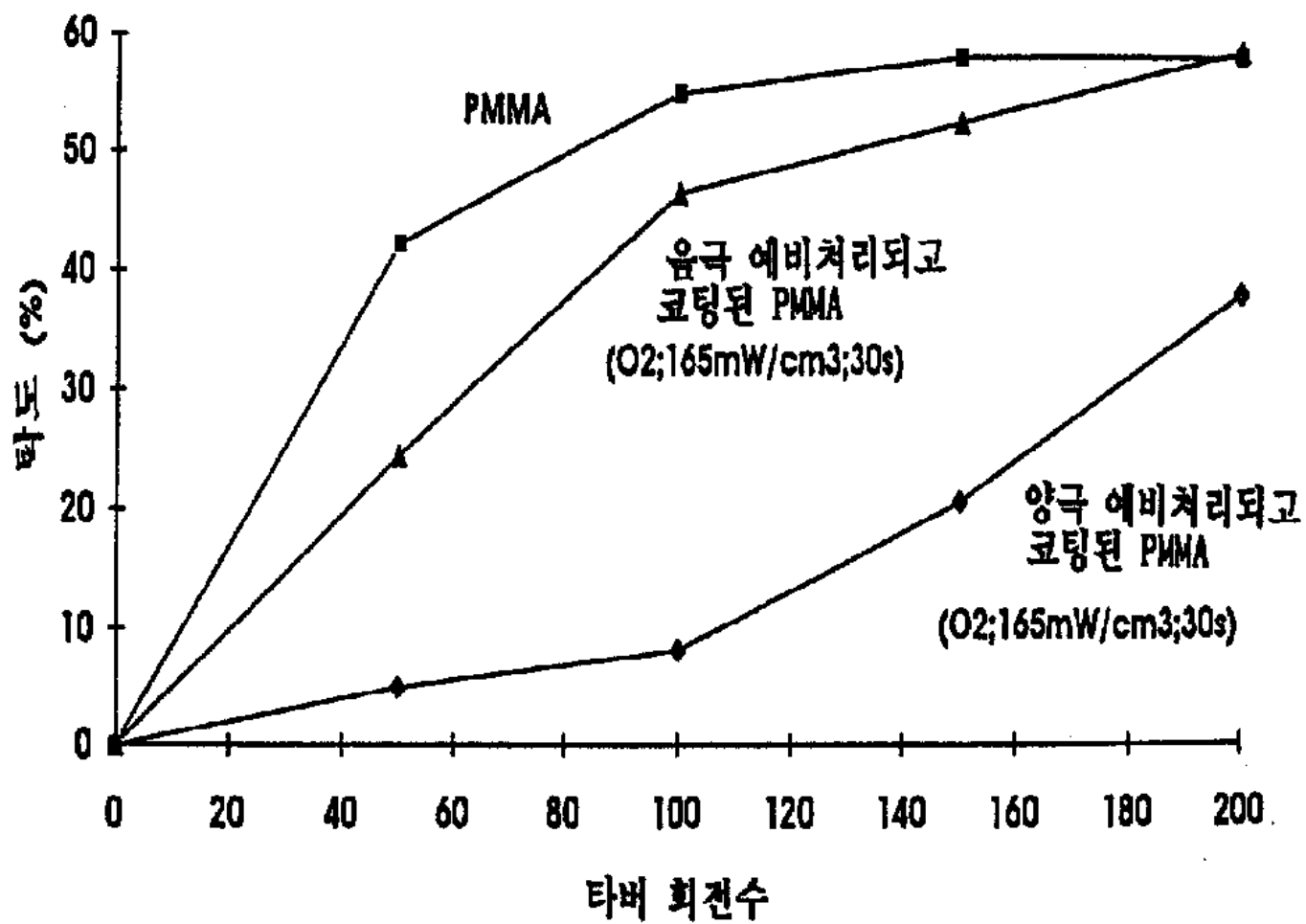
1 , 가 3 50 .

19.

18 , 가 30 .

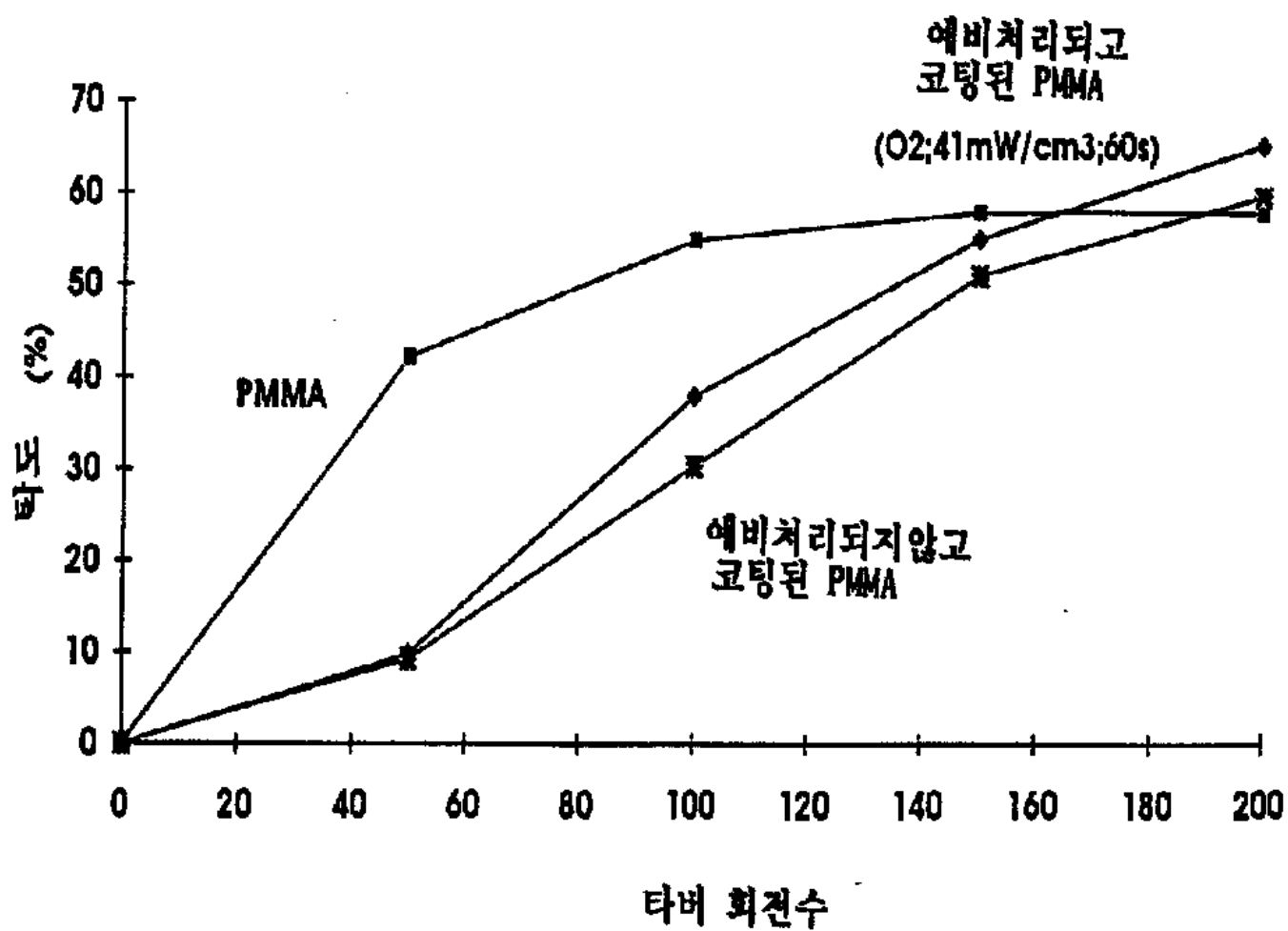


2

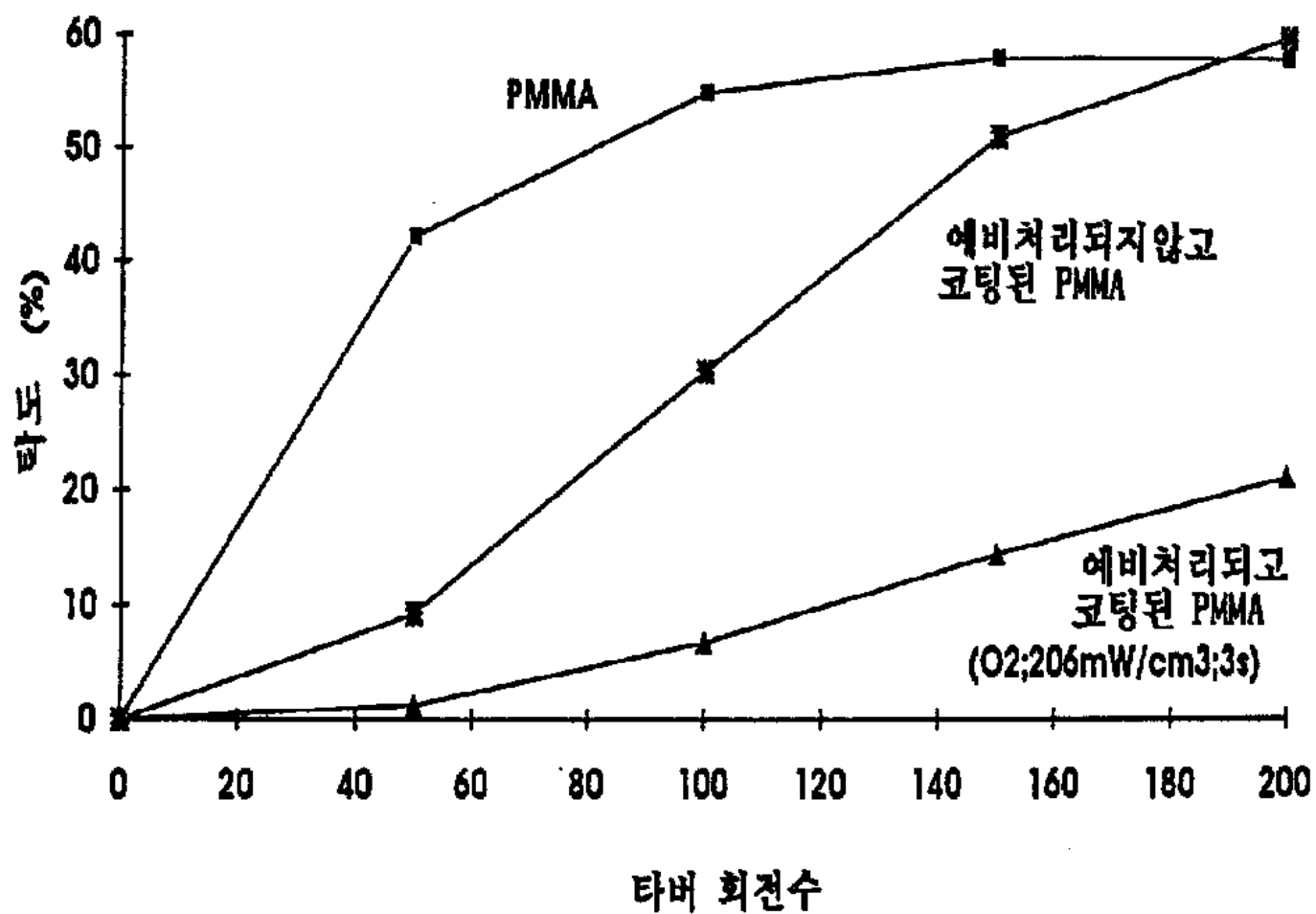




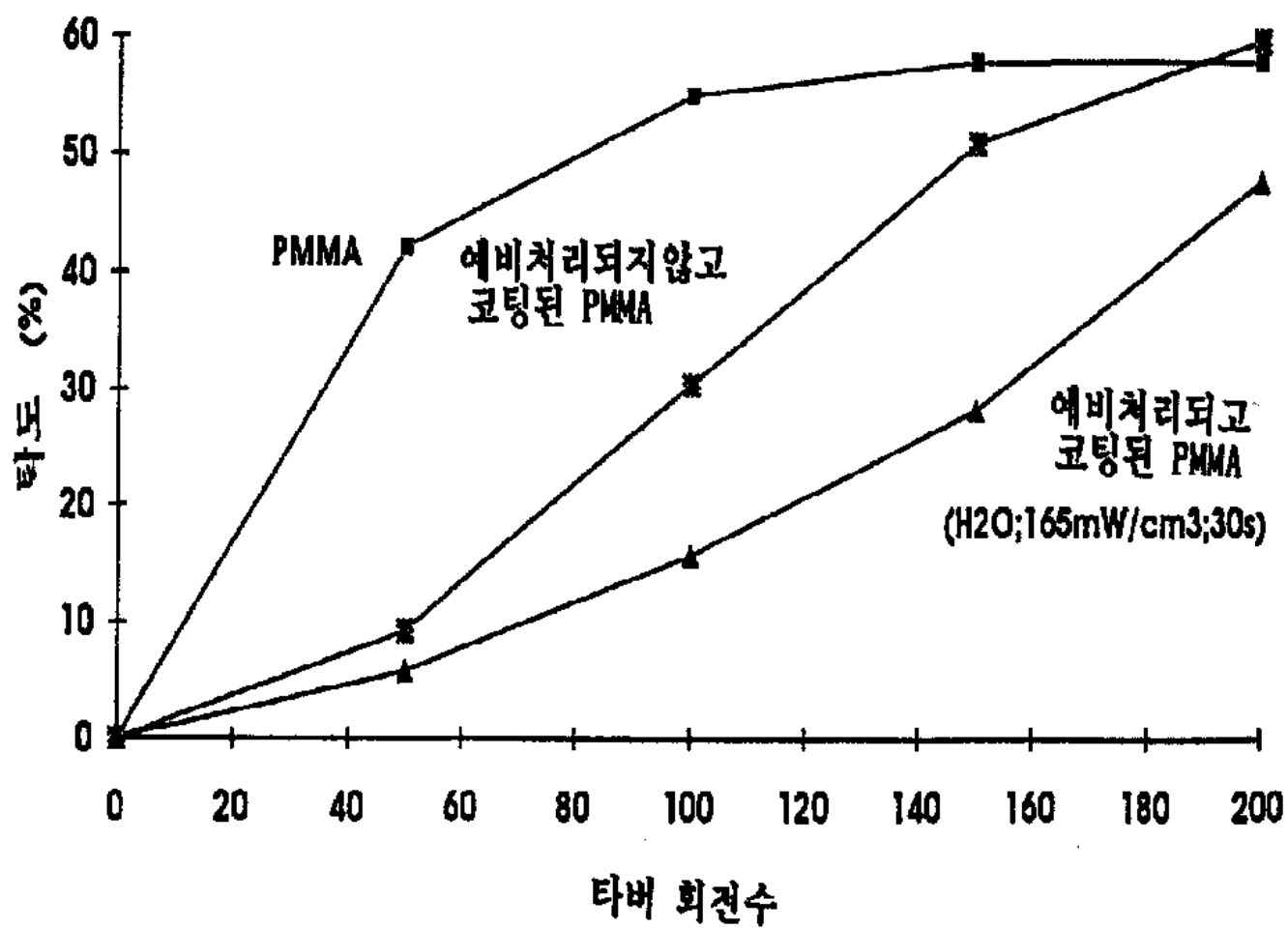
3



4



5



6

