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2003 07 02

(21) 10-2001-0084186  
(22) 2001 12 24

(71) 28-1

(72) 가 가 204

4 407

3 302 61

1 111 1104

가 301

(74)

:

(54)

2 ; ; 2 ;  
가 , 가 ,  
가 ,

- 1
- 2
- 3
- 4                    2                    ,                    -
- 5                    Na 13%
- 6                    Na 13%                    , Na                    589nm

<                    >

- 101,201,202,301...                    102...
- 103,302,303...                    104,307... 1
- 105,203,308...                    106,309... 2
- 107,310...                    108...
- 109,315...                    304,306... 1, 2
- 305...                    311...
- 312...                    313...
- 314...

2

(Laser-induced plasma atomic emission spectroscopy)

가

가

, 가 가

1

1

(101) ,

(101)

(103) ,

(103)

(102) ,

(102)

(105)

1 (104) , (105)

2 (106) , 2 (106)

(107) , (107)

(108) (108)

(105)

(109)

)

가

가

가

2

, 2  
(203)

(201)(202)

가 가

(Optical Multichannel Analyzer), 205

(Charge-Cou

2  
pled Device)

204

2

2

2

2

2

1

1

2

2

1

2

2

;

;

;

;

;

3

3  
 03), (311), (305), 1 (312), 2 (313), (304)(306), 1 (314), 2 (307)(309), (301), (310), (302)(3  
 (311), (312), (313), (314), (315)

(301) Nd(neodymium):YAG(yttrium aluminum garnet)  
 (1064nm) 4 (266nm)

(302)(303) (301) 2

1 (304) 2 (302)(303) (302) (

90° )

(305) 1 (304) 2 (303)  
 (266nm) (305) 1 (304)  
 (1064nm) 2 (303)  
 (1064nm) (266nm)

2

2 (306) (305) ( 90° )

1 (307) 2 (306) , 4 ,  
 (308)

2 (309) (308)

(310) 2 (309)

(311) (310)

(312) (311)

(313) (311)  
 (Boxcar) 가

(314) (313) (314) 가

(315) (313)

3 4

3 4 Nd:YAG (301) (1064nm)

4 (266nm) (301)

가

Nd:YAG (301) (1064nm)

(266nm) (302)(303) , 1064nm

266nm 1 (304) (305) (305)

) (306) (308) 2 (308) 1 (307) (308) 2

(308) 266nm ( ) (308) (308)

가 가 1064nm 가

(308) 2 (309) (310) (310)

(310) (313) (311) (311)

(313) (313) (314)

(315) (315) (315) Q-

(313) ( ) (308) (trigger) (301) 가 가

5 Na( ) 가 13% Na 588.9nm 가

6 064nm , 266nm 588.9nm (310) 1

4 4 , Nd:YAG 1064nm , 10

64nm 4 266nm 266nm 가 Na 가

가

2

가

(signal-to-noise ratio)

가

(57)

1.

(a)

(b) 2 ;

(c) 2 ;

(d) .

1 2. ,

(b) 2

1 3. ,

(a) 가

4. 2 ;

2 ;

1 ;

1 ;

2 ;

2 1 ;

2 ;

2 ;

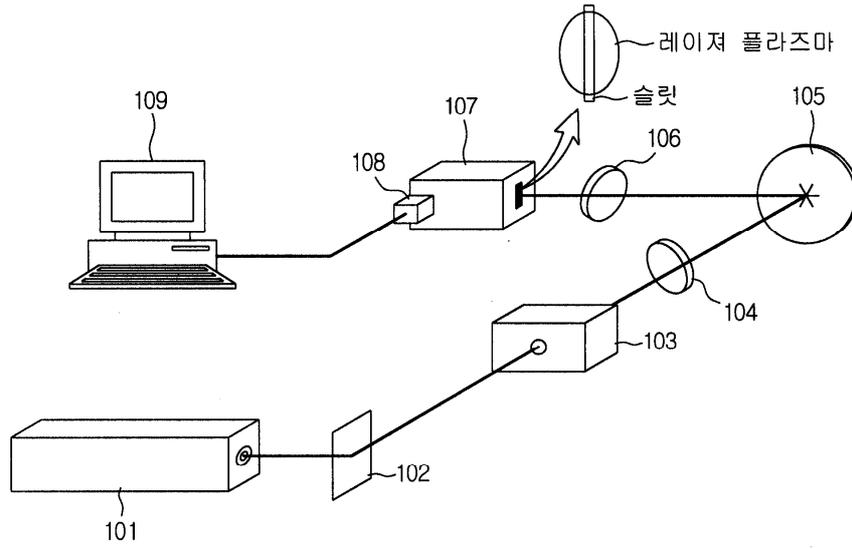
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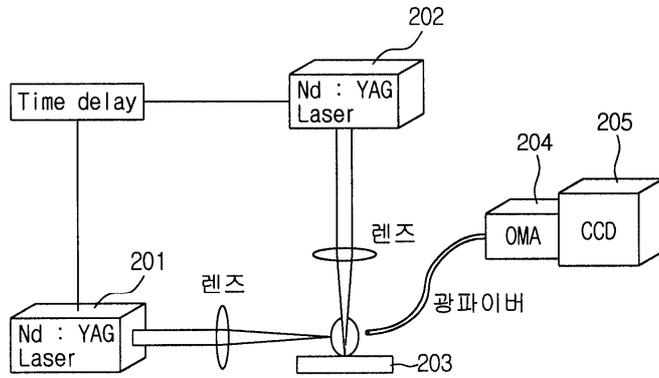
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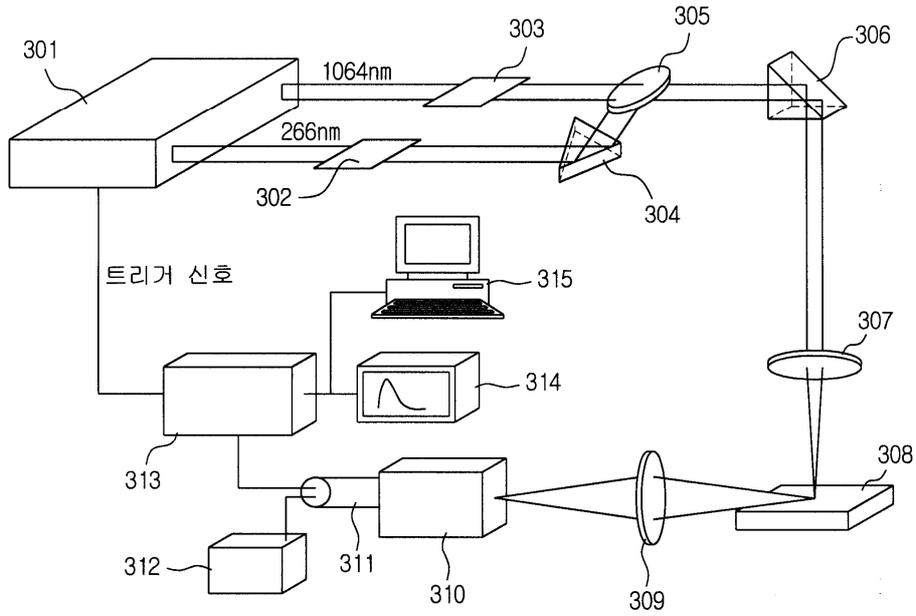
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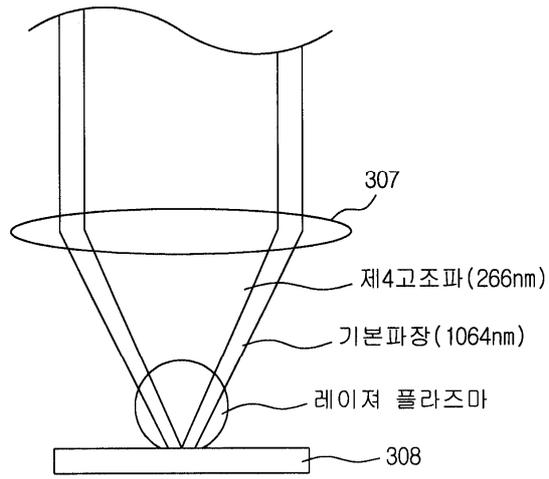
2



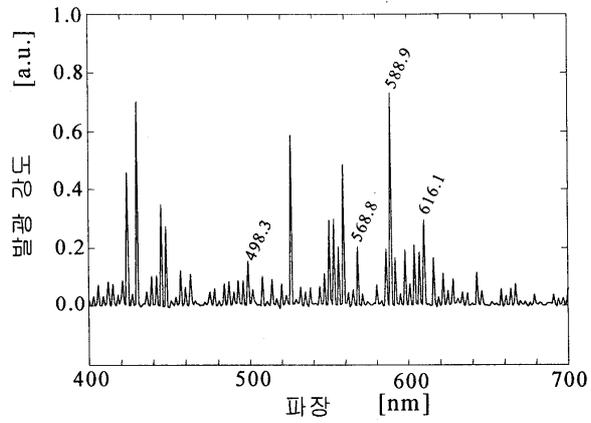
3



4



5



6

