

01.04.21 –

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- 2008

...

: - ,

: - ,

-

:

“16” 2008 17³⁰

501.001.31

...

: 119991, -1, , , .1, .62,

,

...

.

“___” 2008 .

501.001.31

. . . , . . .

(I≥10¹⁶)

/ 2),

()

I~10¹⁶ / 2

- ()

(),

(),

(,

)

“ ”,

(, .)

()

1.

, _____ :

2.

3.

“ ”

1.

2.

$$(\tau \approx 30, \lambda = 308, I \approx 10^8 / \text{cm}^2)$$

$/ \text{cm}^2$ -

(+)

()

17

()

8

(

).

3.

$$, \varepsilon \approx 10 / \text{cm}^2).$$

(≈ 0.3)

($\tau \approx 110, \lambda = 1.24$

55 (40)

20 (10)

0.4

$$(I > 10^{15} / \text{cm}^2).$$

“ ”

“ ”

“ ”

()

),

1.

2.

“ ”

()

3.

($\tau \approx 110$, $\lambda = 1.24$

, $\epsilon \approx 10$ / 2) (≈ 0.3)

,
 : 10-
 LAMN-X (- , , 2003), 13-
 LPHYS-04 (, , 2004),
 ICONO-2005 (- , ,
 2005),
 “ -2005” (, , 2005),
 “LAT-2006” (, , 2006),
 ICONO-2007 (,
 , 2007),
 “ -2007” (, , 2007),
 “ ” FLAMN-07
 (- , , 2007),
 ,
 .
 .

, , ,
 105 , 39 , 2
 126.

§1.1

(, ,) .

§1.2.

§1.3

§1.4

“ ”

§1.5

§2.1

($\lambda=1.24$, $\tau=110$, ≤ 0.9). §2.2

§2.3

$\sim 10^3$ () .

§2.4

($F \approx 6$)

($F \approx 10$),

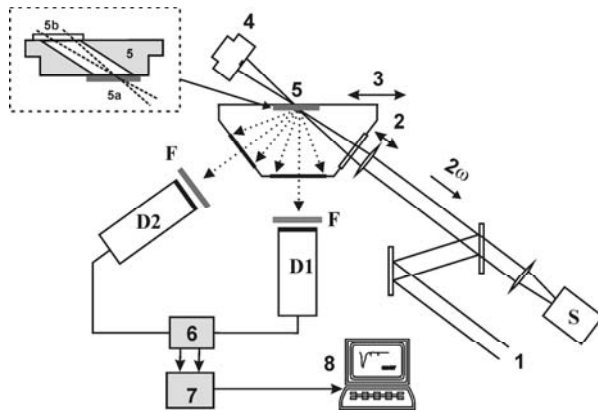
6 10

(

“1/”)

§3.1

(. .1). P-



45^0

. 1 - ; 2 - ; 3 -
 ; 4 - ; 5 -
 (: 5 - , 5b -); 6 -
 ; 7 -
 ; 8 -
 ; D1; D2 - ; F -
 , S -
) 760 .
 10^{-2} .

10 .

NaI

-119,

“ ”

100 .

2.5 (

0.05).

(

)

()

USB-

$$L_{abl} \approx H_{eff} / N_{perf} \quad (H_{eff} - , N_{perf} -)$$

§3.2

(BaF₂, Si)

(Ti, Al)

$$T_{hot} (Ti) \approx T_{hot} (BaF_2) \approx 5$$

$$T_{hot} (Si) \approx T_{hot} (Al) \approx 8$$

$$I \approx 8 \cdot 10^{15} / ^2 \quad I \approx 1 \cdot 10^{16} / ^2$$

§2.3.

$$T_{hot} \sim (I \lambda^2)^{2/3}$$

$$(E > 2.5 \quad E > 10 \quad)$$

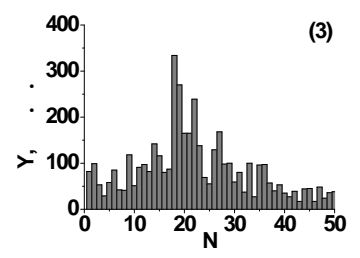
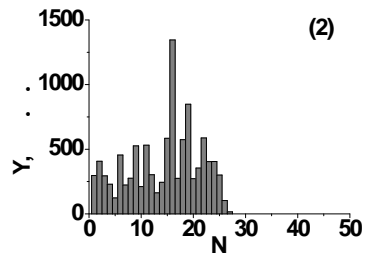
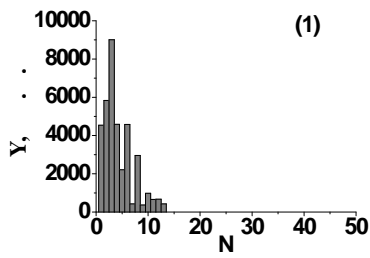
$$I \approx 10^{16} / ^2 \quad . 2$$

(“ ”)

E > 10

N_{perf},

50



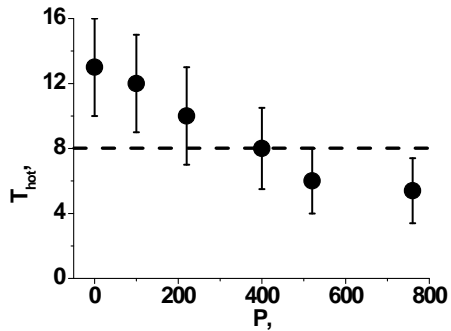
(3) - 760

: (1) - 10^{-2} ; (2) - 400

$N=N_{max}$

2 () 4 ()

$N=N_{max}$



13 ± 3 (

T_{hot} ((.3).

$T_{hot} = 8 \pm 2$)

$T_{hot} \sim I^{2/3}$,

. 3

T_{hot}

P.

0.5

$T_{hot} \approx 8$

§3.3

100 (

$T_{hot} \approx 13$

18

50-100

1.5

$\epsilon \approx 10^3 / \dots$

$L_{abl} = 6.0 \pm 0.4$ ()

$L_{abl} = 1.7 \pm 0.2$ ()

L_{max} ,

“ ”

$L_{max} \approx 40-50$

>400

§3.4

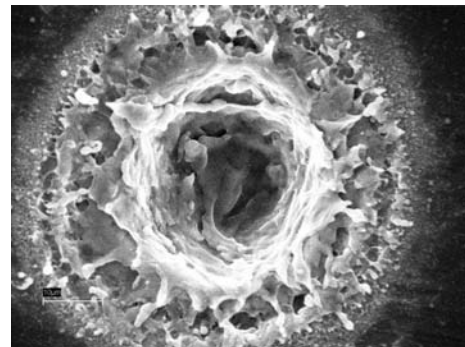
()

.4),

(

),

§3.5



(, ,)

$I \approx 10^{16} / \dots$

()

. 4
(50)

10

6

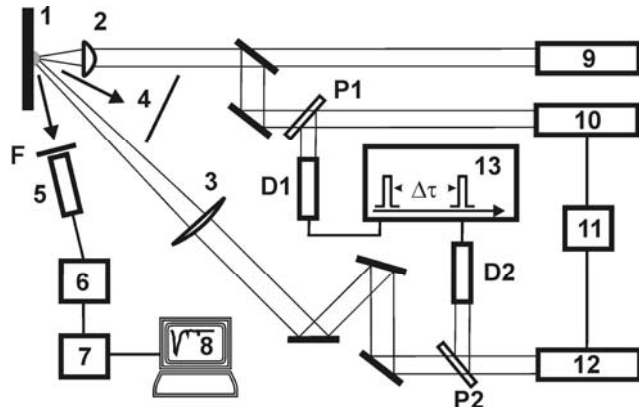
LEO-1430VP.

$N_e \approx 10^{19}$

/ 2 .

§4.1

(. . . 5).



XeCl (≈ 5 , =308 ,
 ≈ 30)
 (≈ 400 , =1240

. 5 : 1 - ; 2 -
 (F=6); 3 - (F=28); 4 -
 ; 5 - ; 6
 ; 7 -
 ; 8 - ; 9 - ; 10 -
 ; 11 -
 ; 12 -
 ; 13 - ; F - ; 1, 2 -
 ; D1, D2 -

XeCl

100

45° (F=28).

200×300 ,

$I \approx 10^8$ / 2 .

$I \approx 10^{16}$ / 2 .

(. . . 1).

()

()

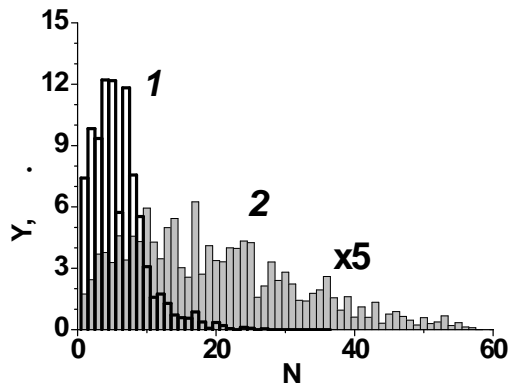
Tektronix TDS1012,

§4.2

Al-

$\Delta t \approx 10$

($E > 2.5$)



- 17 () 8

() (. . 6).

. 6 ($E > 2.5$)

§4.3,

Y

N

(1)

(2)

(2)

40

100

5

§5.1

(. 7).

($\lambda = 1.24$, $\tau \approx 110$, $E \approx 400$,

10)

($F = 10$)

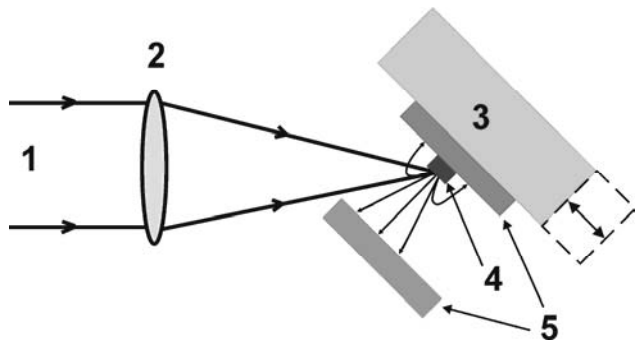
45^0 ,

$\epsilon \approx 10 / ^2$ ($I \approx 10^{14}$

/ 2).

(99,99%) –

$\rho \approx 0.7 / ^3$.



2000 , 160)
Si(100)

.7
: 1 - ; 2 -
; 3 - ; 4 -
, 5 - Si(100)
≈1

“ ”
760 ≈10⁻² ()
10⁻² ~10⁻⁴ ()

99,5 %) 0.3 2 ..
72000.
§5.2

Stand Alone “Smena”.

(1.1 ± 0.2 /), (10⁻⁹ 3)
(4·10⁻¹⁰ 3)

80%
§5.3

: - 90%, - 10%.

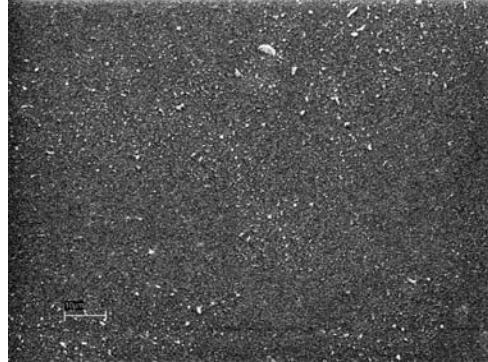
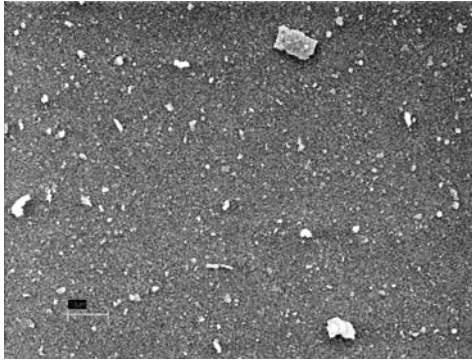
LEO-1430VP,

()

(. . 8).

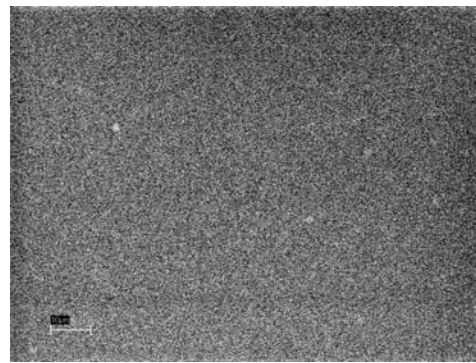
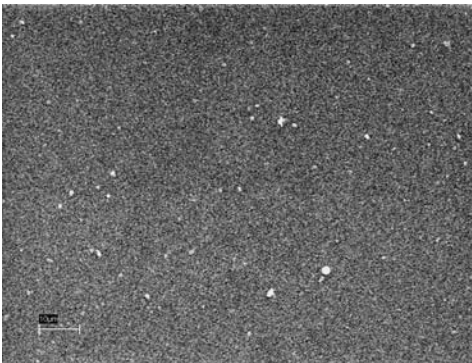
55 (40) 20 (10)
 ()

0.4



)

)



)

)

.8
 , (,) - 10

(,) 0,4
 . (,) -



1.

($\tau=110$, $\lambda=1.24$, ≈ 400 ,
 $v=1-10$, $I \sim 10^{14}-10^{16}$ / 2)
 (=0.01-760) ;

;
 ;

2.

$$(\approx 0.01-760),$$

$$I \approx 10^{16} / \text{ }^2 (\text{ })$$

$$(E > 10)$$

$$\approx 2 (\approx 0.01) \approx 4 (\approx 760).$$

3.

$$T_{\text{hot}} = 8 \pm 2 (\text{ }) \quad T_{\text{hot}} = 13 \pm 3 (\text{ })$$

$$I \approx 10^{16} / \text{ }^2.$$

4.

$$(\text{ }) (\tau \approx 30, \lambda = 308, I \approx 10^8 / \text{ }^2)$$

$$(\text{ }) (\tau \approx 110,$$

$$\lambda = 1.24, I \approx 10^{16} / \text{ }^2)$$

$$\Delta t \approx 10,$$

$$(E > 2.5)$$

$$(\text{ } + \text{ })$$

$$(\text{ }) 17 (\text{ })$$

$$) 8 (\text{ })$$

).

40

100

5.

$$(\approx 0.3)$$

$$(\tau \approx 110,$$

$$\lambda = 1.24, \varepsilon \approx 10 / \text{ }^2).$$

() 55 (40) 20 (10)
0.4 .

1. . . , . . , . . , . . , “
-
BaF₂ -
10¹⁵ / 2”// **35(6)**, 487-488
(2005).
2. . . , . . , “
- BaF₂
”// **XII**
,
“ -2005”, 12-15 , **1**, 166-167 (2005).
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”// **37(7)**, 599-600 (2007).
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7. . . , . . , . . , . . , . . , . . , . . ,
“
”// **37(3)**, 285-289 (2007).

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