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INFLUENCE OF PULSED LASER RADIATION ON DIELECTRIC PROPERTIES OF ORGANIC GLASS

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Abstract. *The work investigated the effect of laser pulses on the dielectric properties of organic glass. The reasons for the observed changes were considered. The obtained results were compared with data on impact action on a similar target.*

Keywords: laser pulse, organic glass, impact effect, dielectric properties.

[6].

[7]. -

[8]. (),

510,6 [9]. 20 ,
 f 3-5 .
 3-11 ². 3 .

[10].
 I 0,6 6,6 $0,02 / ^2$; $1 / ^2$.
 0,5-1,5 / .

10-20 . ($I = 5$

/ ²). f . () : -
 ϵ' , ϵ'' , σ^y , $\text{tg}\delta$.

$\epsilon' \text{ tg}\delta$ 1 -
 -560 «TESLA», σ^y

6-13 .

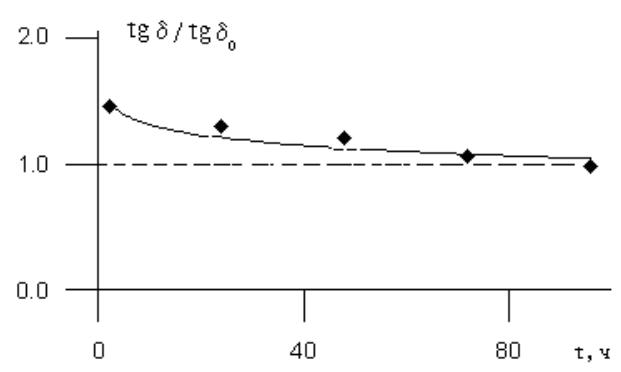
$\epsilon'' = \epsilon' \text{ tg}\delta$.
 σ^y . ϵ' 3,2 %, $\sigma^y - 4$ %, $\text{tg}\delta - 7,0$ % $\epsilon'' - 7,7$ %.

. 1 ($\epsilon'_1, \text{tg}\delta_1, \epsilon''_1, \sigma^y_1 -$, 1)

1

ϵ'_1/ϵ'	$\text{tg}\delta_1/\text{tg}\delta$	ϵ''_1/ϵ''	σ^y_1/σ^y
0,95	1,45	1,38	1,40

. 1



. 1.

1. 3-5 , 5 / ², -

2. () -
80 ± 10 .

σ^y 1,4 (1,45) $tg\delta$, -
(. . σ^y), -
[11]. [12] -

ε'_1 [13]. - , -

ε' - , ε'_1 -

ε' .
25 ± 3 ° 80 ± 10 , -
 σ^y

p_t , [14],

$$p_t = I_0/2 , \tag{1}$$

I_0 - , - , -

$$p_L = \Gamma \left(\frac{E_L}{V_a} \right) \tag{2}$$

[15] V_a ,

2-2,5, [16]. () -

$p \cong 1/2$. p .
(1)-(2) -

[1, 2].
[17],

(, [17])

1. // N 5-392. : , 1996. 16 . -
2. // . 2017. . 7, 4. . 23–27. -
3. : , 1966. 688 . -
4. Eliezer S., Koslin V.V., Fortov V.E. Spallation of metals under laser irradiation // J. Appl. Phys. 1991. V. 70, N 8. P. 4524–4531. -
5. // . 1987. . 10, 3. . 3–82. -
6. : 6-287. : , 1990. 43 . -
7. // . 2000. . 5. . 53–55. -
8. : . 1983. 391 . -
9. // . 2001. 7. . 57–61. -
10. // . 2020. . 10, 3. . 9–18. -
11. : . - , 1984. 127 . -
12. : 6 . / 5: / : , 2005. 453 . -
13. : 4 . / 2: $\epsilon \operatorname{tg} \delta$ / : , 2002. 326 . -
14. : - , 1996. 408 . -
15. // . 2012. . 445, 4. . 396–397. -
16. // . 2000. 12. . 6–10. -
17. () // . 1995. . 65, 7. . 176–179. -