

Formation of the sign-changing pressure pulse at short-lasting penetrating radiation

Efremov V P

Joint Institute for High Temperatures of the Russian Academy of Sciences,
Izhorskaya 13 Bldg 2, Moscow 125412, Russia

v.p.efremov@yandex.ru

A large number of experiments on irradiation were performed [1–5]. The radiation penetrates into the depth determined by the spectrum of emission. When the targets are space-limited, the shortening of the one-pulse duration leads to an increase in power efficiency. The phenomenon is peculiar to nano, pico and femtosecond equipment. In fact, the target mechanically becomes the device for creating the pulse of the desired shape. In the present work, analysis of the pressure pulse formed in the target is carried out. The search for a filler continues [6].

- [1] Bushman A V, Efremov V P, Kanel G I, Lomonosov I V, Utkin A V, Fortov V E and Yushkov E S 1992 *Khim. Fiz.* **11**(3) 587–94
- [2] Zubareva A N, Mochalova V M, Utkin A V and Efremov V P 2016 *J. Phys.: Conf. Ser.* **774** 012055
- [3] Efremov V P, Ivanov M F, Kiverin A D and Utkin A V 2017 *Shock Waves* **27**(3) 517–22
- [4] Zubareva A N, Utkin A V, Mochalova V M and Efremov V P 2020 *J. Phys.: Conf. Ser.* **1556** 012026
- [5] Efremov V P and Utkin A V 2018 *Adv. Mater. Technol.* (3) 17–21
- [6] Efremov V P and Shevchenko N V 2022 Modification by nanodiamonds of ion-plasma protective coatings *XVI Sci. Conf. RARAN “Prospects for Resource-Saving Disposal of Military Equipment”* (Moscow: Granitsa) pp 133–43