

Optical and x-ray laser-induced phenomena in condensed media

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The results from papers [1–4] are reported. In paper [1], we consider the effect of a femtosecond (fs) laser pulse of hard x-ray (9 keV) on a lithium fluoride target. In paper [2], the propagation of a two-jump elastic–fracture laser-induced shock in diamond is considered. In paper [3], the melting–crystallization of titanium by a multi-megabar shock is described. Such a shock is generated by a fs laser pulse. The problem has applications in LSP (laser shock peening)—there is a refinement of large crystallites (tens of microns) to nanosize. In paper [4], the coefficients of electron–phonon interaction and thermal conductivity in gold with strongly excited electron subsystem were determined. I express deep gratitude to the co-authors [1–4].

[1] Makarov S *et al* 2023 *Opt. Express* **31** 26383–26397

[2] Makarov S *et al* 2023 *Matter Radiat. Extremes* **8** 066601

[3] Zhakhovsky V *et al* 2023 *Phys. Fluids* **35** 096104

[4] Inogamov N *et al* 2024 *Zh. Eksp. Teor. Fiz.* **165**