

the threshold of initiation by Q-switch laser beam $\sim 1000 \text{ mJ} \cdot \text{cm}^{-2}$ and lead styphnate- $\sim 400 \text{ mJ} \cdot \text{cm}^{-2}$ ^[12]). Hence complex **5** is a promising safe light-sensitive explosive for laser detonators.

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References:

- [1] Ilyushin M A, Tselinsky I V, Zhilin A Yu, et al. Coordination complexes as inorganic explosives for initiation systems [J]. *Chinese Journal of Energetic Materials (Hanneng Cailiao)*, 2004, 12(1): 15–19.
- [2] Ilyushin M A, Tselinsky I V, Uglyumov I A, et al. Study of Submicron Structured Energetic Coordination Metal Complexes for Laser Initiation Systems [J]. *Central European Journal of Energetic Materials*, 2005, 13(1): 21–33.
- [3] Ilyushin M A, Tselinsky I V, Sudarikov A M. Preparation of components for energetic materials [M]. Ed. Tselinsky I. V. Saint-Petersburg: Leningrad State University named A. S. Pushkin. 2006. (in Russian)
- [4] Ilyushin M A, Petrova N A, Tselinsky I V. The correlation between thermal decomposition and laser ignition parameters for complexes of HAT [J]. *Chinese Journal of Energetic Materials (Hanneng Cailiao)*, 1993, 1(4): 41–43.
- [5] И. А. Угрюмов, М. А. Илюшин, И. В. Целинский, А. С. Коэлов. Синтез и свойства светочувствительных комплексных перхлоратов d – металлов с 3(5) – гидразино – 4 – амино – 1,2, 4 – триазолом в качестве лиганда [J]. Журнал прикладной химии, 2003, 76(3): 454–456.
- [6] Ilyushin M A, Tselinsky I V. The influence of the structure of the salts of azoles upon the processes of their thermal and laser initiation [A]. Proceedings of the VIII seminar “New trends in research of energetic materials” [C], Pardubice. Czech Republic, 2005: 213–221.
- [7] Chernay A V, Sobolev V V, Chernay V A, et al. Chapter 11. Ignition of explosives by pulse lasers [A]. Physics of impulse treatment of materials [M]. Ed. Sobolev V. V. Dnepropetrovsk. Art-Press. 2003: 267–314. (in Russian)
- [8] Chernay A V, Sobolev V V, Chernay V A, et al. Laser initiation of PBX formulations on base of 3(5)-hydrazino-4-amino-1,2,4-triazole copper (II) perchlorate [J]. *Physics of Combustion and Explosion*, 2003, 39(3): 105–110. (in Russian)
- [9] Ilyushin M A, Tselinsky I V, Bachurina I V. Laser initiation of perchlorate complexes [A]. Internetional Conference “Shock waves in condensed matter” [C], Saint-Petersburg. 2006: 227–232. (in Russian)
- [10] Ilyushin M A, Tselinsky I V, Ugrumov I A, et al. Coordination complexes as inorganic primary explosives [A]. Proceedings of the VI seminar “New trends in research of energetic materials” [C], Pardubice. Czech Republic, 2003: 146–152.
- [11] Cudzilo S, Szmigelski R. Synthesis and investigations of some di-(R-1,2,4-triazolato) copper (II) perchlorates [J]. *Bulletyn Wojskowej Akademii Technicznej*, 2000, 49(12): 5–17. (in Polish).
- [12] Ilyushin M A, Tselinsky I V. Laser initiation of high-energy-capacity compounds in science and technology [J]. *Russian Journal of Applied Chemistry*, 2000, 73(8): 1305–1312.
- [13] Tarzhanov V I. Pre-explosive phenomena under fast initiation of the explosives [J]. *Physics of Combustion and Explosion*, 2003, 39(6): 3–11. (in Russian)
- [14] Kriger B G, Kalensky A V. Initiation of heavy metal azides by pulse irradiation [J]. *Chemical Physics*, 1995, 14(4): 152–160. (in Russian)

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