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Conditions of Experimental Realization of an Electric Detonation BORIS YANKOVSKIY, JIHT RAS — The detonation can be subdivided on chemical one, light one (laser breakdown of gases), electronic one (electric breakdown in solid dielectric from the anode) depending on an energy source. The electric detonation is the chemical detonation with additional energy release in a chemical reaction zone as result of heating from the going electric current. The chemical reaction zone has some thickness and appreciable conductivity. The required effect of an expected electric detonation can be the increase of detonation velocity D related to dimensionless ratio:  $(D_2/D_1)^2 \sim W_2/W_1$ .  $W_1$  is a density of the released chemical energy  $(J/m^3)$ ,  $W_2$  is total density chemical and thermal energy by an external electric source allocated in chemical reaction zone  $(J/m^3)$ . The pulse electric source should provide density of a flow and specific allocation of energy, corresponding to similar quantities of the chemical nature in a zone of chemical reaction. We analyzed a detonation of disk-shaped assemblage with diameter 20 cm and weight of HE charge about 0,5 kg. The analysis has shown, that the pulse source is necessary for guaranteed realization of an electric detonation with an energy capacity 5 MJ and which can make a current from 0,4 up to 13 MA on prospective load 0,016-0,16Ohm. We have accepted efficiency of energy transfer at level of 50 percent. The effect of increase of a detonation velocity can make 15-30 percent.

> Boris Yankovskiy JIHT RAS

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